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EDITORIAL

OUR UNDER-ACHIEVING UNIVERSE

"We could land a man on the Moon, if we wanted to. We really could." In 1940 such sentiments were considered quite literally lunatic. By 1950 they were merely crackpot. By 1960 they were visionary. Now, of course, they are History.

We could terraform Venus, if we wanted to.

Or put factories—and farms!—in orbit, thus precipitating the Third Industrial Revolution. Or change the traditional three-score-and-ten to a hundred happy, healthy, *robust* years. We could begin work on unmanned probes to the nearer stars. That's in the short run. In the long run we can do—Anything!

But we don't. Instead we pull in our horns, walk and think small, figure out the least uncomfortable techniques for dying-by-inches. And why? Because our meagre-minded "leaders" (of Right *and* Left, by God!) are incapable of grasping even the idea of an open-ended future. Willy-nilly we are all committed to a short-term survival strategy of playing it safe; the surest long-term recipe for disaster.

So we spend billions piled upon billions for fleets of fighter-bombers that are obsolete before they are on-line: when we could be building Space Shuttles capable of carrying clusters of MIRVs—and of initiating the Age of Space as well. So we spend more billions (*lots* more billions) on an anti-ICBM missile system that is phased out as worthless almost before it becomes operational: when we could for the same money have created a laser anti-ICBM system that would have worked—and also have enabled us to pop payloads into orbit for pennies-per-pound. And let's not forget our incredible bureaucracy that somehow consumes kilo-billions *not* delivering social services: guess how much cheaper—and more nourishing!—it would be to give food-stamp recipients food instead. And so on. All it takes is a little vision in high places, and we can fulfill our short-term goals while we win for ourselves a Universe.

Well, 1976 is an Election Year. Perhaps there are a few would-be occupants of said high places who are capable of entertaining visionary ideas—even crackpot or lunatic ones. And making them History.

C'mon: let's terraform Venus!

—BAEN

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The fast-breeder reactor may be the answer to our current energy problems: but what might be the answer to—

PLUTONIUM

ARSEN DARNAY

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I

IN HIS NINTH EXISTENCE he was an SS-guard at the infamous Hermsberg and acquired a heavy karmic debt.

In those days his name was Helmut Schweinhirt and in appearance he was chunky, blond, wide-faced, and steady.

On the cosmic scale, his Schweinhirt incarnation was already well above the average. Slowly he had grown in consciousness choosing ever more alert and discriminating parents. The Schweinhirt elders were peasants, but of the enterprising kind. *Mutti* ran a small vegetable shop supplied from *Vati's* suburban land where everything was raised by the most modern methods.

Helmut was well on his way up the ladder of awareness when the war came with its irresistible temptations. The chaotic, psychic maelstrom caught him up and carried him along—from home to barracks to parade ground to Hermsberg, and he lived the evanescent dream of racial superiority for a second or two of eternal duration.

In the small room he rented near the concentration camp (Hermsberg was new and there were no barracks initially), he had two lamps shaded by tatooed human skin. Underneath the heavy, lumpy mattress of his narrow bed, in a small blue sack, he collected gold teeth and other curiosities.

Helmut was not unusually cruel or sadistic with the exception of one case, which would prove his undoing for some centuries to come. But he allowed himself to be carried away by the breathless lust of his comrades, a lust for violence which came and went in pulses over the camp, the consequence of frustration, ennui, guilt, and fear. Then he too joined in the beatings and tramplings of newly arrived Underhumans.

The temptation that would indirectly cost him his life some time later came one winter morning in the form of a father and his daughter. The father was a poet or lawyer or doctor, an inordinately tall figure, though a little stooped. He had curly salt-and-pepper hair; large, dark, watery eyes; and fingers of exceeding length. His eyes were mournful and heavy with awareness.

Helmut met the pair upon arrival, mingled in with others in a long stream of people reaching back to the cattle cars. In the reception hall men and women were split into separate groups, and Helmut stood there with several others amidst the odors of disinfectant, pushing the people along, making them move on, move on. A disturbance in another room called away the NCO in charge. During that unsupervised

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moment, Helmut approached the tall jew's daugher—she stood quite near him, eyes on the rough concrete floor—and he more or less forced her to yield up a kiss or two while his hands ranged indecently over her tits and under her skirt. She struggled fiercely.

She was something of a rarity in Hermsberg—a beauty. Bosomy, languid-eyed, long-lashed, and soft. Her skin and bearing spoke of silks and laces and recently lost wealth. Such as she seldom made it into this line. They were diverted to 'domestic service' in the homes of higher-ups. She would also be discovered, as Helmut knew quite well, and he wanted to get a feel of her while he had a chance.

Across the room the tall jew broke from the line so swiftly that the guards—who smirkingly enjoyed Helmut's antics with the pretty jewess—had no time to restrain him. He came in giant strides across the room, dark eyes burning, a little stooped. His exceedingly long, fine fingers grasped Helmut's blond locks, knocking Helmut's cap askew. He jerked back Helmut's head. Helmut yelled in pain and let go of the soft female. He turned to the tall jew with fury. The jew, still holding Helmut's hair, hit him across the face with a free hand—once, twice, three times. Guards grabbed the jew and dragged him away.

All day long his fellow guards teased Helmut about his humiliation. That night he sat alone in the light of a tatooed lamp and brooded with a book on his lap. The book dealt with infantry tactics, knowledge he would soon need. But he didn't read and didn't learn. He brooded about vengeance and about the soft jewess whose faint, sweet scent still seemed to cling to his cheek. She was . . .she seemed. . . . Oh, he didn't really know. She seemed so familiar to him. Kissing her had been the most natural thing in the world.

* * *

He soon succeeded in being assigned to a land-clearing party that included the tall jew. Decades later Hermsberg would be the site of a uranium mine, its product moving to Russia. Now it was a tiny village, a concentration camp, and a road in process of being built through forest. The land-clearing work had to do with that road.

Outdoor duty was not exactly sought. Winter advanced on every front with snow and frost. Even bundled up in a heavy jacket and wearing a woolen cap beneath the helmet, a man froze out there, on the stony, icy ground. Mitted hands had to be slapped and boots had to be stamped to keep up the circulation in the extremities. The breath vapored whitely. The moisture froze in the nose. But Helmut felt no regret. He restored his German manhood methodically, repaying the slaps he had received with interest.

They spent some weeks together in cruel union. The man's name was Mahler, and he came from Berlin. Until this time those sensitive long fingers of his had never grasped anything more substantial than a pen. Now they were obliged to swing a pickaxe against soil so hard sparks seemed to fly from the contact of metal and earth. At any

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moment a blow might strike him from the side or from behind delivered with the stock of a rifle. Sometimes a kick sent him sprawling and his unprotected, gloveless, frozen hands bled when he rose, trembling from cold and malnutrition. Helmut's wide face and steady eyes would stare at him with satisfied menace.

"Eines Tages, kleiner Helmut, eines Tages . . ." Mahler would murmur with mournful eyes. The words mean, "One of these days, little Helmut, one of these days . . . ." He said them knowing that more blows would follow, said them *wanting* blows. Mahler longed for an end to his miseries. Blows, kicks, cold, hatred, indigestible food, savage work in frozen wilderness—all these would speed him to that eternal nothingness which would follow the dissolution of this wretched biological accident called Mahler.

The girl's name was Eva. Much as Helmut had suspected, she had been segregated from the rest, had disappeared into the quarters of a major. To know her there, in someone else's arms, aroused him to cold fury, and that fury left him in the form of kicks and blows and cruelties, until Herr Mahler could no longer work and lay supine on his flat straw, dead for all intents and purposes except for a dark shining in his eyes.

By the mysterious channels of communication that transcended all barriers between gentile and jew, word of her father's treatment finally reached Eva. Abruptly Helmut found himself with orders to the Russian front.

It happened on the outskirts of Stalingrad. Helmut was running for cover past the face of a low-squatting peasant hut when a tiny, wizened, wrinkled old fellow—he was clearly an old jew with a tall black hat and sideburns curly at the ends—appeared around the end of the building. Helmut hesitated for a second, and that hesitation was enough. He was caught by a plaster-blasting string of machine-gun bullets and fell face down on the ground. The final vision of his incarnation was that of Eva's angry, frightened eyes when he had violently sought the parted softness of her lips.

* * *

He found himself in dimensionless paradise, a play of light and energies. Hurricanes of force caught and carried him. He struggled and fought, panicked, disoriented, and discovered that he had no arms to wave about, nothing tangible attaching to his free awareness. Terror grasped him. For a timeless moment he remembered all his lives, saw Eva in many incarnations, always his, always together, meant for each other, joined eternally. But this time he had lost her. The gradually ascending curve of his karma suddenly sagged in his German life, heavy with debt. He sucked nonexistent breath into nonexistent lungs.

I will do good, he thought. I'll pay it all back with a life of service.

At this thought a brightness formed above him, a brilliant light somewhere in that space that had no

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'where' and was no 'space.' A circle of light. It seemed to have a face, seemed to resemble the wrinkled old jew. It shone. The light frightened him, made him recoil. He turned, in a manner of speaking, toward the separated red of the spectrum around that disc of brilliance. He turned farther, toward a purple, and then images began to form and lift from a gathering darkness.

He saw America, the New World. He knew it was America although at first it was nothing more than a vast continental darkness with a scatter of light along the coasts and here and there inland. From that sprinkled darkness a dark, chtonic force rose and pulled him down. On twenty million beds, carseats, haypiles, floors, couches . . . forty million Americans copulated on this Wednesday night—naked, half-naked, and almost fully clothed—in the manner of the two-backed beast, like dogs, side by side, and in unspeakable poses.

Desire!

He fell into the tornado of desire down below, drawn by mysterious forces, once more nearly encased in time but not yet securely material. His entire being longed for materiality, burned to participate in the creative act. But he wouldn't plunge in just anywhere. He sought among these copulators for cleanliness and innocence, for decency and righteousness, impelled away from the petty horror that had been his last life.

A dark-purple force-stream guided him in a westerly direction. The rising vibrations were benevolent as he descended. He plunged in precisely at the moment of impregnation, *was* the impregnation, his soul-force adding the tiny increment of energy the tailed semen needed to penetrate the giant ovum's resistant skin.

His mom and dad lay side by side, still breathing hard after the exertions of love, when the entity known as Helmut Schweinhirt—its cast-off body stiffening slowly against a Russian wall—dissolved in childish bliss and lost its memories.

* * *

The choice of the Clark identity turned out felicitous. To all appearances, the bad karma had been eradicated or would soon be displaced by the cumulations of service.

John Clark grew up an all-American boy, son of a machinist in Oklahoma city. He had a paper route and later stocked groceries. In high school he played on the basketball team, but in college he worked in the cafetaria to make a go of it. By sheer application he acquired the only kind of degree a man of service would choose in his day and age—he became an engineer. A series of jobs eventually led to the Corps of Engineers, and from there, through the linkage of friends, he joined a newly formed Office of Energy Analysis within the Department of Commerce. There he applied himself to the development of strategies for containing atomic power plant wastes.

His permanent identity began to breathe more and more easily as the years passed. On a level of which

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Clark himself was unaware except as a sometimes pensive mood, he began to feel that perhaps he had, by good luck and a strictly virtuous life, escaped the consequences of that other existence.

Then, within three humid, sultry summer weeks, the mysterious magnetism of fate caught him up again in the net he had so striven to escape.

From Hermsberg Mahler had also ascended into paradise upon his death and had raged in impotent fury at his own survival, which went counter to his philosophical convictions and promised yet other miseries in some new life. Hatred impelled him to seek vengeance against *kleiner Helmut* now that vengeance seemed a possibility. The spark of his existence followed an energy storm to the Americas.

His daughter Eva could never forget that brief assault in the reception hall. Despite his crudity and violence, she had sensed a genuine affection deep within the blond SS-guard. He had pointed to experiences Eva longed to have but couldn't achieve in the brief and constrained life that had been left her at that point—rapidly ended after transfer to another camp. She also went to America, now that *he* was there.

The three of them coincided in Washington, D.C., in 1974.

II

CLARK RETURNED to the Department after his customary noon-time walk around the Elipse. On the way he passed the White House and made a jog through Lafayette Park to extend his walk.

It was one of those Washington days—so humid even the eyeballs sweated. Men walked the streets pathetically carrying coats over shoulders, ties loose and pulled down, collars open, mopping brows with soggy handkerchiefs. Tourists stood in long, sweating lines waiting to get into the White House. Cameras hung from their necks and tugging children from their hands. Angry voices shattered the vacation mood.

Clark was made of sterner stuff. He wore his coat about powerful shoulders. His tie was trimly bunched at his neck. He could tough it through southern humidity on pure spirit alone.

A bank sign on Pennsylvania Avenue said that it was 96 degrees. The humidity was hitting eighty. Up ahead the sun blazed down and sparkled in the fountains of Lafayette Park where a few brave lunchers sat on shaded patches of grass while pigeons pranced head-bobbing on the walks.

Neither heat nor cold bothered Clark. He went on his walk no matter what. He was as steady as the men of the postal service. Neither hail nor shine nor fear of night—or whatever it said on the face of the postal building. He always walked around the Elipse twice, watching the softball players when they were out, nodding to red-faced, agonized, sweating middle-aged joggers, oggled the White House from a distance, and eventually returned to the Department.

He entered the building from the 14th Street side and glimpsed

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bearded Jack Hansley up ahead returning from lunch with a tall man who gesticulated with long fingers in an animated manner as he walked. Clark guessed the tall man was yet another of Jack Hansley's school mates, probably another consultant.

When he reached the elevator, those two were already gone, probably taking the stairs to save energy—Hansley was a bit crazy about symbolic gestures.

In his own wing, Clark made a slight detour to pass by Evelyn's office, his throat tightening. He stopped in the door. "Hi," he said, and waved to her. She waved back from an inclined position, elbows on the spread-out Washington *Post*. She was reading the latest transcripts of the latest tapes. After the wave she looked down again, and Clark reluctantly went to his own office. He munched diet cookies pensively, thinking about her.

Evelyn was the only woman in his office—discounting the clerical people—and had been hired recently in fulfillment of the Affirmative Action Plan to get the office up to quota on women and minorities.

Unlike Clark she came from the east—Massachussetts. Everything about her spoke of wealth—the slender figure, high cheekbones, the fine white fuzz on her cheeks (you could see it from the right angle in the right light), the softness of her figure, the darkness of her languid eyes, the length of her lashes, the gleam of her pampered hair.

The first time he had come upon her in the office, Clark had almost sucked in his breath—despite the 'I Voted for McGovern' button she

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wore on the knit blouse just above a large, bouncy, braless breast.

He'd nodded to her curtly, had rapidly passed her by. In his office, turned toward the window so that no one would see him do it, he squirted 'Mouthfresh' between his jaws from a thumb-sized aerosol. Then, resolutely, his grey eyes steady in his wide face, one hand self-consciously brushing his crew-cut blond hair, he went right back where he'd left her studying a civil rights poster on the bulletin board. He stuck out his hand in the forth-right manner of a good midwestern boy.

"Hi," he said. "My name's John Clark. What's yours?"

He had never done anything like that with a woman, neither with a stranger nor a prospective colleague. But Evelyn Bantry aroused a powerful emotion in him, not unlike a memory of long-suppressed desire. He knew her before he knew her, as it were.

We're meant for each other, he'd thought at the time, and he had swallowed at the suddenness, the spontaneous explosion of that thought.

It wasn't possible, not really. She was very, very different from him, quite unlike Betty who worked in Chicago as a nurse and whom Clark more or less meant to marry one of these days.

Evelyn was radical. That soon emerged, and was reinforced, in countless discussions they had with each other. These talks seldom ended on a note of harmony, and yet both of them felt compelled to start them and to prolong them, sometimes even over dinner.

Mostly they talked about work. She had a very different conception of it than he did.

They were in the Energy Game, by Clark's reckoning—providing energy to the American people, American industry. He was in there swinging for the Standard of Living. People like Clark and the work they did ensured a prosperous future.

In Evelyn's eyes this particular section of the Office of Energy Analysis had been created by liberals to balance and check the Atomic Energy Commission's reckless drive for unlimited nuclear power. The section was charged with analysis of nuclear waste containment strategies, and if it was in the Department of Commerce by legal mandate rather than in the AEC, any fool could guess that Congress didn't trust the AEC to do the job right.

Yeah, but . . . Clark's reasoning went somewhat differently. If the atomic power industry couldn't find acceptable ways to manage its wastes, it couldn't expand rapidly enough to provide the American people with the power they demanded, and so, indirectly—

"Screw the American people," Evelyn had cried on one occasion in her liberated way. Clark would still see her as she'd sat, legs up on the corner of her desk, the window behind her flowing hair—red this time. Her naked toes had wiggled angrily in sandals. Clark had stared into the shadows of her loose, bell-bottomed, checkered slacks. In his mind he followed her disappearing leg . . .

Hold that thought—it ain't de-

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cent. Evelyn's a nice girl despite her liberation. If she thinks that we're in business to hold up energy consumption, she's wrong, of course, and ought to go to work for the environmental boys. But it's her business, and I hope she stays.

She *was* a nice girl—dammit!

Clark reached up and slapped himself playfully. He had to get her out of his head and get to work. He brushed diet cookie crumbs from the June progress report on the New Mexico siting study. Steadily dropping water tables in that relatively empty state, excellent geology, and a half-way interested Indian tribe all came together as a potential long-term nuclear waste storage site with more than a hundred years of capacity. He opened the report and began to read.

* * *

Two floors higher up, bearded Jack Hansley, head of the Office of Energy Analysis, emerged from his carpeted suite with an arm around Ted Aspic's shoulder—an equally young but much taller man.

"It's a far-out idea, Ted," he said. "Way out. But then you've always had far-out notions—and I've always been a sucker for them."

He released Aspic's shoulder and stood for a moment pondering, fingers a-twirl in his beard.

"Tell you what," he resumed with a glance. "I'll take you down to see one of my people—John Clark. He's a bit . . . conservative, shall we say? But a solid man. I've got him doing this kind of stuff—contingency planning. That's about all that the AEC will let us do. See if you can talk him into it. I'll put in a good word for you, of course, but you understand my problem. On an idea like this, I've got to have the staff behind me. By the way, Ted, how come you're into sociology now? Aren't you in physics any more?"

"*Future Now* is into whatever we can get funded," Aspic said. "Just so long as I like the concept." He stepped over to the secretary's desk and picked up a fat brown bag designed to fit beneath an airplane seat.

"Is that what you call it? *Future Now*? How do you like consulting, by the way?"

Aspic's long face drew into a smile. "Freedom, man. It's the freedom trip. Hungry, hustling, but free. No, seriously, we're doing fine. I've got four engineers on board, a couple of economists, a planner, and . . . hold on now—an astrologer!"

"An astrologer. . . ?"

"It's the latest. I'm gambling a bit here, but nowadays . . . Jack, the occult is *in*! Give me another month or two, and I'll have sold my astrologer full time to the Office of Education. I mean it!"

They walked toward the door. Hansley smiled, shaking his head. "Ted," he said, holding the door, "one of these days you'll hit it big. I just know it."

They walked out. The secretary, who had been listening with mild interest, picked up her nail polish bottle and slowly, carefully, creamed another layer of turquoise on her left thumb.

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* * *

Clark seethed inwardly when Hansley left giving an unmistakeable signal—*fund this guy!*

He looked down at the card. *Future Now,* Theodore J. Aspic III., President. Mountainview, California. A West Coast huckster, to be sure. *"To be sure,"* it echoed in his head, and he saw the puckered lips of a woman on a commercial selling deodorant.

He glanced up at this guy with eyes narrowed in hostility. Something about the man. . . . He was inordinately tall and sat slouched in the chair, his back forming one side of a triangle between the chairback and the seat. His long legs were crossed. He had placed his hands behind his head, long fingers intertwined. Early grey showed at his temples. Large, dark, watery eyes looked across the desk with a measure of hidden merriment, condescension. . . ? Clark didn't like Ted Aspic one bit. The man had kook written all over him, but he was dangerous kook, well-connected kook.

"Well, sir, what can I do for you, Mr. Aspic?"

"Let's make that Ted, shall we?" The dark eyes looked at him with moist penetration for a moment. Then Aspic uncoiled his arms and legs and bent down toward his bag. He fumbled around for a moment and came up with a sheaf of Xeroxed sheets. He held the pages in his hand, not looking at them, leaned forward over them.

"Isn't it true that Plutonium-239 has a half-life of 24,000 years?"

Does water flow down hill? Clark thought. He barely nodded.

"And isn't it also true, John, that plutonium wastes have to be contained some 250,000 years? As a consequence of that half-life, I mean?"

"So I have been told," Clark said, hoping the sarcasm would glimmer through.

They were all like this, the well-connected kooks. They discovered atomic wastes one day reading the San Francisco *Chronicle* or the LA *Times*, and then they sailed in here with half-baked notions that a man was supposed to swallow with joy and hallelujas. Had Aspic discovered abandoned salt mines? Would he suggest deep-well injection? Or was it empty missile silos this time? Hansley had dubbed him a physicist, so he probably wanted to shoot the crap up into space at an astronomical cost. On the other hand, this guy looked like a left-wing raddy of the first water. He probably wanted to use the waste to heat black people's pools in winter time or some such nonsense.

I better cool it, Clark told himself. Whatever else this character is, he's the public, and service is the name of the game.

Aspic had been leafing through the pages in his hand. Now he found his place and looked up.

"This is an article I came across recently and it gave me an idea. The Smithsonian Magazine. Article by Dennis Farney."

Clark nodded. He knew the article. It was entitled: "Ominous problem: what to do with radioactive waste." Half the congressional mail lately had dealt with it.

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"The part that gave me the idea is this paragraph here on page twenty-four. He's talking about the problem of long-term containment and so on and so forth, and then he says here, 'Some have seriously proposed that society create a new kind of "priesthood" to watch over the waste, much as medieval monks watched over mankind's written history in the Dark Ages. Presumably, this priesthood would have to be supranational in character and somehow insulated from the rise and fall of nations through the centuries.' "

Aspic looked up. Clark regarded him with a steady gaze, but inwardly he groaned. It was much worse than he had thought. Even Congress had passed up *that* paragraph.

"What do you propose to do?"

"I propose to look into the feasibility of setting up such a priesthood. My initial notion was sort of along the lines of the Jesuits, you see, but after we did a bit of work on the back of the envelope, it seemed better to create a hereditary—"

"How much?" Clark asked in a tight little voice.

The dark, watery eyes looked up. "A hundred and fifty kay."

Clark didn't blink; he stared back.

"For phase one," Aspic added.

* * *

From the 747's nearly stratospheric altitude, the Rocky Mountains, now flattening slowly toward the west, looked like the uneven scales of a giant brown lizzard. Empty land. . . .

Aspic contemplated the scene below, awash in closely linked thoughts. His long, thin fingers rested lightly on the second gin-over rocks he'd substituted for his usual martinis. The flight was empty and he had three seats all to himself. He'd kicked off his shoes and loosened his tie. He enjoyed now the last hour of that light serenity such trips always gave him. Soon the plane would dip down over the bay and come in for a landing in San Francisco. Bronzed, efficient Helen would await him with the kids and tell him all about the tennis games she had or hadn't won. The children would whine and want a souvenir from the airport shops. They'd screech and wail in the station wagon all the way home, but Helen wouldn't hear them; she had nerves of steel; and he wouldn't bother to shut them up. Permissive child-rearing . . . no pay-out, no pay-out at all.

He took a sip on the gin and stared down again at the brown emptiness imagining a great monastic cluster down there, a foundation worthy of ancient Cluny—but devoted to the maintenance of boiling, eternal, atomic wastes. Would the monks chant? Would they evolve a totally new religion over time? Or would one have to invent the religion in advance? A good question that needed exploration, a specific research task to be written into the proposal John Clark had at last, reluctantly, asked be prepared.

Aspic thought about Clark for a second, recalling the man. An uptight type, evident even from the short hair he wore . . . in this day and age. He'd sat behind his desk

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upright and stiff. On the way out Aspic had noted that the man wore white socks. Had clearly been proud of that hammerlock-style manly handshake. A typical provincial kid come to Washington to help run the great federal machine. Aspic knew how to deal with them. They were easily flattered into submission by a show of interest. But Clark. . . .

Clark had aroused in Aspic a kind of hostility which was far more than merely a mirroring of the dislike Clark had exuded toward *him*!

Could I have met him somewhere before? Aspic wondered. Surely not. I've never been in Oshkosh or Kokomo or Wichita Falls or wherever the hell he comes from. Maybe in a previous life. . . ?

Aspic smiled to himself, but then the smile faded and he took a good-sized suck on his drink, pensively crunched a bit of ice.

A year ago he'd had a stormy love affair with a lady professor from UCLA during a joint project for the now defunct National Materials Policy Commission. She had been the perfect antidote to Helen—wilting, far-out sensuality. Cheeks a little saggy. Eyes a little rayed. Long, mournful breasts. Baggy rears. She'd worn copper bracelets on both wrists and had been into everything imaginable.

She had introduced him to LSD at the peak of their romance when he'd spent three, four days in Los Angeles each week. She believed in reincarnation and swore to him he could retrace his lives under the sway of acid. He had laughed that off; she had insisted, quoting Tim Leary, and at last he'd dropped a little acid on a dare.

Now Aspic pondered that experience.

Inconclusive, by and large. Yet. . . . Amidst all the tortured, ecstatic, twisted, oozing, mind-blowing experiences, he recalled one sequence that had sent him screaming from wall to wall in the bare room they'd used for those sessions. It had been a vision of a concentration camp. Aspic had been a jew, a prominent lawyer reduced to clearing tree-stumps from frozen German earth.

He shuddered at the recall. After that experience he had quietly withdrawn from the professor, had assigned one of the economists to work with her. He'd never touched acid since, would never touch it again.

The stewardess stopped by his seat. "Everything all right?"

He nodded and smiled to her and she moved on.

He lifted and swirled the gin-over-rocks, tempted against all reason to dwell further and deeper on that acid vision, sensing that it contained something important, something that might explain his powerful aversion to John Clark of Commerce.

Aspic took a drink and forced his mind away from the subject. He would discuss the matter with Templar over lunch tomorrow. To Jack Hansley he'd represented Templar as an astrologer, but Cam was much more than that. He was a genuine mystic, little more than a nearsighted kid, but gifted! The kid was *weird*! Making his living casting horoscopes—until Aspic had lifted him up into the middle class by a single wave of his long fin-

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gers. Cam might have an explanation. *If* reincarnation really worked, in a manner of speaking (not that it was comparable to a machine, but still) then something might be done with that knowledge, the matter could be explored further with a grant from the National Science Foundation. NSF was an easy mark for such odd things. The results might even be applied in that project with Clark. Heredity. . . .

The pitch of the engines changed ever so slightly. The long descent had begun.

III

A YEAR PASSED before the contract was let. Even under ordinary circumstances, the federal mills ground very, very slowly. But in this case other factors were involved. For one thing, *Future Now* received a non-competed procurement which required long justifications. For another, Clark went into the job with a great deal less than his usual enthusiasm. Only periodic prods from the front office made him move the papers toward the inevitable dump of a hundred and fifty thousand dollars in Aspic's direction. And, most importantly, during this time Clark was preoccupied with Evelyn Bantry.

He was especially preoccupied with her on this Friday morning; so much so that he could barely keep his mind on the substance of the meeting.

Clark represented Commerce on an inter-agency working group. The first meeting of the group was in progress in a windowless AEC conference room—a large table ringed by a grey wall of bureaucratic faces. A man from the Bureau of Indian Affairs held forth acrimoniously against the New Mexico Plan, hitting the table with a fist and pointing index. His point, which he made in as many ways as he could think of and as often as he could grab the word, was that the decision of the Shashtuk Tribal Council was in no way binding on the Department—by which he meant *his* department, Interior. AEC and Commerce should be lauded for finding a long-term storage site, but they could place it somewhere other than on BIA land, thank you.

Ordinarily Clark would have been roused to battle-ardor by such bureaucratic attack. Today he couldn't focus, nor did he have to. Interior would lose this battle. Energy came first. And tonight he'd score, by God! Finally, at long, long last, he'd *score*!

His mind wandered into the future with anticipation. Too many hours still separated him from the inevitable. At eleven he had a meeting with Aspic—progress report time. Then a quick walk around the Elipse. Clark doubted that he'd get much work done in the afternoon, excited as he was, so he'd do some reading, maybe, and cut out early, and buy the wine she'd asked him to bring, and a bunch of flowers, get showered and shaved, and then at six sharp he'd be in front of her apartment door on New Hampshire Avenue for home-cooked dinner and . . . you know what!

Man . . .

Clark glanced at his watch. Quarter to eleven. He had to get out of here. Rising, he excused himself,

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pleading another appointment. He gathered papers into his briefcase and left.

In a year his appearance had changed. Now his blond hair hung down long and rich—George Washington, Tom Jefferson style. He sported a good-sized mustache with down-curling ends. He wore a natty checkered suit and dark socks under buckled shoes. His briefcase was imitation crocodile.

On the way out he stopped briefly before a large bulletin board and searched the sheaves of position descriptions for a GS-14. Not that he needed the money. But if he married Evelyn, he should be a grade higher in case she wanted to quit working and have babies. He saw two or three 14's advertised, but they were all in far-off places. Nobody would grab those, of course. He passed on.

He met Aspic on the way in, in the dark entry hall of Commerce, and they went up to the office together. At the moment Clark could even take Aspic without irritation. He almost bantered with the tall man on the way. They settled down—Clark behind his desk, Aspic in front of it.

"You want the door closed?" Aspic asked with a sly grin.

Aspic knew how much this project embarrassed Clark. The men in the office had begun to call him the 'plutonium priest,' and 'Father,' and 'Brother Clark.' But now Clark's humor was excellent.

"Naw," he said, waving a hand, "leave it open."

They got down to business.

Aspic's original idea had grown with time into a veritable forest of concepts. He spread before Clark a long flow-diagram depicting the study phases, a maze of rectangles connected by lines. His long index finger pointed to boxes as he explained the sequence of tasks. The psycho-profile questionnaires to determine the optimal personality mix of various gradations of a Permanent Priesthood were in testing now, with good results. Ceremonial and Ritualistics were not yet scoped out fully, but Cam Templar—whom Clark had met on the last trip, if he could recall—had started work.

"But what worries me," Aspic said, leaning over the desk, tapping a large box in which, tentatively, someone had drawn a question mark in pencil, lightly, "is Succession Insurance."

His long form straightened and he sat down in his chair.

"My thinking is this way, John. For a century or two we might rely on natural recruitment. Or we could make the priesthood hereditary, with everyone living right in the monastic compound, and cross-breeding between monasteries—that's Option B, as you'll recall. But I just can't give you any certainty beyond about four generations. So much could change in that time. The social fabric might break down—it almost did under Nixon. It could happen again—and, who knows, next time we might not make it. No matter how appealing or frightening or whatever we make the religion *inside*, sooner or later people might start to drift from the priesthood, enticed away by the *outside*. Look at the Catholics, a perfect analogy. We've got to come up with . . . something. Something

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really *hard* to bind these people to the Custodial Service. Now I've got some ideas along those lines, and NSF has given us a little grant to help explore it, but in the long run it might take big money."

Aspic looked at Clark wondering if he had said too much already. If the Permanent Priesthood concept made Clark shy, what Aspic now had in mind would make him bolt! But he had to lay some foundations now—it was either that or talk Jack Hansley into appointing another project officer.

Clark's eyes had narrowed and he had straightened up behind his desk. "What are you talking about?"

"Ohhh," Aspic said. He looked down at his hands. He chose his words with care. More than ever he was certain that this man across the desk had played a crucial role in his, in Aspic's life. Discounting for genetic differences, which inevitably prevented identical *appearance*, Clark nevertheless incarnated that certain *personality* Aspic knew from an LSD vision. He had returned to that vision under Cam Templar's careful tutelage. He saw the German SS-guard in Clark, the cruel blond beast with ready boots and rifle stock. It was in his eyes, the manner, even in the fall of the man's long hair—(what*ever* had induced him to let it grow long?)—as if the man's soul-force radiated out through the physical matrix forcing it to give a semblance of identity even in the external. Such a man was dangerous, had to be watched, would have to be caught, would taste retribution.

Aspic unfolded his hands, looked up. "Ohh," he said again, "it's nothing much really, just an extension of the principle of heredity into another dimension, as it were. I'm not really ready to discuss it in detail—"

"Say, Johnny, about that wine I asked you to bri—"

She stood in the doorway at the conclusion of a quick run down the hall, just a touch breathless, red hair flowing, braless breasts heaving, golden rings around her arm.

"Evelyn! Evelyn Bantry, for God's *sake!*"

"Teddy!"

They embraced affectionately and then looked at each other at arm's length. Clark watched with a fist-sized hole in his stomach.

"Harvard Square? Sixty nine?" he asked.

"Has it been that long?" she asked. "Teddy, what a pleasant surprise! Are you . . ." she glanced at Clark. "I mean—is this business?"

Aspic nodded. "But you. You wouldn't be working here, by any chance?"

"Sure," she said, "This is my turf, Ted. And you? Are you on your own? Or still with—was it GE?"

"Free as a bird," he said. "On my own. I've formed this small consulting group on the West Coast—but say, Evelyn. This is no place. What about lunch? Can you make it?"

"Why not," she said impulsively with a darting glance at Clark. "Let's catch up on things on my time—rather than Uncle's." She turned to Clark. "Sorry to barge in on a meeting like this, John. Your door was open, and so I. . . ." Her head went back to Aspic. "Just

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pick me up at my office down the hall." She gestured. "Bye, now."

"Evelyn!" Clark called, but she had already disappeared.

* * *

At five ten minute intervals Clark trudged out of his office and went down the hall past hers. Two o'clock, two-fifteen, two-twenty, quarter to three.

He began to call her apartment. At first there was no answer. Then the phone was busy. Finally an operator told him it was out of order.

At four o'clock he went home without a word to anyone. In the closet-sized kitchen of his efficiency apartment, he rummaged in the back of a cabinet until he came up with a pint of whiskey, three-quarters full. Slouched in the single armchair in the living room, he drank the booze out of the bottle slowly, staring at his watch from time to time. At five-thirty he straightened his tie, dabbed at his mustache, brushed his hair, and went down into the street. He bought a bottle of wine in a liquor store down the block. He hailed a cab and told it to take him to 20th and New Hampshire Avenue.

He walked through the gold-carpeted lobby, passed beneath the chandelier, nodded to the guard in his red, epauletted uniform. His finger touched the elevator button and the device turned a faint pink. Silvery doors slid aside. He stepped in and found Floor Nine. The elevator surged up.

Before her door he pressed the bell, later hammered on the imitation oak with his fist. At last she opened the door a crack, dishelved, in a robe. He pushed his way in, went past her through a short, narrow hall. In the dining nook he glimpsed the table—probably set the night before—a rich table cloth, two plates, silver, crystal, unlit candles, a flowery centerpiece.

Evelyn came behind him, talking, but he didn't hear what she said. Blood pounded in his temples, behind his eyes, sang in his ears. He had never been inside her place, but he found the bedroom without trouble. Aspic lay on the bed, naked but for shorts, an apprehensive look on his face as he stared up at Clark framed in the door. The Princess-style push-button phone on the dresser was off the hook and made a rythmic, cricket noise.

For a second Clark stared at Aspic and at the bed. The covers had been pushed off the greyish, much-used, wrinkled bed sheet. Her clothes lay in a heap to one side, hastily dropped.

"Hey . . ." Aspic called, seeing the look in Clark's eyes, regretting now the laughs he and Ev had had about Clark between bouts of passion. He extended a hand toward Clark in a warding, cajoling gesture.

Clark took the bottle by its neck and threw it at Aspic with all of his force. But he was unsteady and slow from drinking. Aspic saw the motion and rolled out of the way. The bottle hit the soft, padded back-board of the bed and fell unharmed on the sheet, a dark-green, round-bellied Portugese rose.

A sob formed in Clark's throat. He didn't have his heart in the act of violence. Evelyn! *She* had de-

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stroyed him, but he could do nothing to her. He turned aside and brushed past her without a look.

She had followed him to the bedroom door and stood with her arms raised protectively in front, tiny fists beneath her chin, eyes shrinking. Four martinis, it echoed in her mind while her eyes were on Clark. Four martinis, she told herself dully, suddenly sobered and aghast at her own stupidity. She had been dazed and utterly silly and now . . . She felt sick to her stomach and turned away.

Clark stopped in the dinette, suppressing sobs. He took hold of the fine, patterned damask. A jerk sent plates, silver, crystal, candles, and flower-piece crashing to the terazzo floor. He walked out of the apartment toward the elevator.

Back in his own apartment, Clark went to the only piece of furniture he owned in this furnished efficiency—an old-fashioned roll-top desk. He began to rummage in its narrow cubicles. Cancelled checks, plastic name tags he'd worn at conferences, an insurance policy, letters from Mom, a yellow-red garage bill, a little black book! He took it with him to the bedroom, sat down on the bed, and lifted the telephone onto his lap. He dialed a string of numbers.

Far away, in the Windy City, on the shores of Lake Michigan, a telephone rang, and rang, and rang. Then at last, just as he was about to hang up in despair, a cheery voice came on.

"Hello?"

"Betty!" he husked into the mouthpiece. "Oh, Betty, I love you, I love you."

IV

In the fall of 2006, they finished building the odd-shaped radar dishes on top of the hexagonal building some distance from the compound, and three days later planes started to land scientific teams at the government airport a couple of kilometers beyond Perpetual, New Mexico.

Radar dishes?

John Clark had no other name for them. Oh, sure. They probably had fancy-dancy names and did something unusual, else there wouldn't be the tight security surrounding the project. But to him they looked like radar dishes.

He gunned the jeep and roared past the new complex oggling those shallow baskets of wire, reddened now in the setting sun. He suspected that this was a defense installation after all and had nothing to do with rad-waste storage. Probably some of that super-hush psycho stuff rumored to be under development now that the U.S. was about to plunge into the Russo-Chinese war despite Hubbard's election-year promises. The Chinese, supposedly, had missiles implanted with living human brains so cleverly trained they could evade virtually any kind of mechanical counter-rocket. Psycho was the only answer. From what Clark had picked up, it projected fields of the greatest sensitivity and caused schizoid reactions in the missile-brains leading to their self-chosen destruction high up in the atmosphere.

God, he hoped Hubbard would stay the hell out of that war. He personally didn't care. He was too

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old for that sort of thing by a long shot. But the boys. . . .

No. He for one didn't see any reason for a Russo-Chinese intervention, yet tonight on the news three cabinet officials, in speeches across the country, had floated up the first trial baloon. In other words, the decision had already been made.

Desert streaked by on either side of him, lovely in the gathering dark. It had rained briefly two days ago—the first time this year—and the desert had bloomed like a woman in love. Clark was of two minds about rain. On the one hand it made this country beautiful beyond compare. On the other it caused trouble. The torrent had revealed several leaks into arti-caverns G and K, and Emergency had been mobilized for two days and a night to plug the leaks, lest steam formation generate pressures great enough to cause a series of cave-ins. God, what a mess that'd be!

Up ahead Clark saw the dirt road and applied pressure to the brake. He turned the jeep off to the right and bounced forward leaving a trail of dust. Chief Walk-on-air would see that cloud and know that old man Clark was coming—although the chief didn't need outward signs to know the future, he *knew* it, although you couldn't get him to say much more than a handful of words at a time. Walk-on-air had told him about those leaks, but without the rain they hadn't been able to find them.

Clark felt revulsion. He *hated* rad-waste with a depth and passion so basic it was a kind of Super-loathing. Years and years and years ago he had gladly grabbed a GS-14 to get the hell out of Washington, to marry Betty, and to live among decent folk far from the pointy-heads and whores of the Potomac. It had been a good life at first. Betty had turned out to be his kind of girl—calm, handy, and true as true-blue could be. Later on, when the New Mexico Plan came to fruition—*his* plan—he had volunteered to help set up the site among the Shashtuk indians. In those days there had been nothing out here but cactus and earth huts. They'd lived in a trailer for two years. Things sure had changed since then. Look at Perpetual: ten thousand people. A rail-line brought the rad-waste from thousands of miles away—*kilometers*, Clark; don't always forget about metrication. Four great compounds. Ninety-six arti-caverns. And yet it was all like ashes in the mouth.

Clark couldn't recall precisely when it had hit him. Before the Act, of course. Perhaps in the late eighties, eighty-four, eighty-six . . . thereabouts in time. He'd already felt it sharply in eighty-seven, the year they broke inflation's back and the civil service took a sixty-percent paycut. Freddy was nine years old, Gerry seven. That same year they passed the Nuclear Waste Security Act, and people like Clark were frozen in their jobs, willy-nilly. They had no power, the handful of guys out in the field running these hazardous waste depots. The Union had bargained away their future for a whopping pension plan. A few people had muttered about 20th cen-

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tury serfs in the media, but the Kansas salt mine disaster had blinded everyone. Besides, Clark could have left the service had he wanted to—a free man still. But who would do that with depression raging out there and two young boys to feed. So he had stayed, but that feeling had grown by degrees.

He still remembered sitting at the kitchen table, nights, his fist around a can of beer, morose, staring at the placemat left over from dinner, the TV going in another room, thinking about Aspic, wondering if Aspic had been behind the Nuclear Waste Security Act, the first shot in a war planned long ago. But it didn't seem likely. He'd lost sight of all those people. Aspic had been a kook. Somebody had probably found him out.

Betty came up behind him and put her hands on his shoulder by his neck. He could feel her lips touch the top of his head. The short bristles tickled.

"Don't brood, honey."

But he had brooded on and on until it was too late.

Up ahead loomed a Shashtuk roundhouse. Smoke curled from its center. A '95 Chevy sedan stood parked off to the side. It had been doctored Indian style with roof cut off by hack-saw. Dogs came yelping and then, recognizing his scent, turned into tail-wobbling welcome.

He alighted with a groan, heaving his big belly. Got to diet. Just Gotto! He went into the hut, bending to clear the low door. Dung-smoke and Shashtuk odors mingled in his nostrils. An ancient crone squatted by the fire with a pan. A young boy sat on a cot.

"Hiya, Superintendent."

Clark nodded to the boy. "Where's the chief?"

The boy gestured into darkness.

"Up on the rise?" Clark asked.

The boy nodded.

Clark went out again and trekked slowly up the slight elevation behind the house, marked by two large cacti resembling hands stretched to the sky. The dogs followed him a short distance, then dropped back.

He found Chief Walk-on-air seated between the giant plants, hands on his knees, his face turned to the west where the sun had finally set and only a thin line of crimson separated darkness from darkness. The old man had a wrinkled indian face and jet-black hair bound into a braid in the back. His eyes were closed.

Clark caught his breath a bit and then sat down on the bare ground. Doing so he noticed a bundle next to the chief. Had Walk-on-air been out collecting peyote? Or was he bound outward now? In the darkness Clark couldn't see whether the bag was full or not. It was just a blackness on the ground.

Clark waited knowing that no amount of coaxing would make the old chief speak until he chose to do so on his own accord. Clark wasn't any younger than the indian; perhaps he was even older. But in all other respects the chief was the teacher, Clark the disciple.

It had all begun fifteen years ago when Clark had heard about the old man's prophetic powers and had sought him out with a question: "Will I ever leave Perpetual and get a start in another kind of business?"

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Clark still didn't have an answer to that question. But from the first moment of their meeting, he had been attracted to the chief, almost indifferently at first, had acquiesced in a kind of strange relationship. It consisted of weekly meetings filled with long silences broken occasionally by a deep rumble of words. In the third year Walk-on-air announced abruptly that he had "hunted" Clark's spirit, had caught it, and found it good. In those days Clark had not yet learned his lesson and had pressed the chief to explain himself—but to no avail. But some weeks later the indian had fed him some peyote cut into small slices, and chewing them Clark had been catapulted into paradise. Then, twice a year thereafter, less frequently some years, the chief had repeated that procedure.

His visionary experiences didn't change Clark outwardly. He continued on, the same as he was, but he no longer asked his questions, having been satisfied on that account in some mysterious way. He knew that he would live and die here in Perpetual, that it was meet and fitting, that somehow it was meant to be, had something to do with his old longing to serve the public.

Clark had resigned himself to that. But he hated it. God, he hated it. The chief was his only real consolation—the chief and the annual communion with the Holy Mushroom, an experience he kept from Betty with as much jealous secrecy as his humiliation by one Evelyn Bantry, whose memory still sometimes returned to him, whose figure appeared in his peyote visions, many-faced but always the same.

Across the bit of rock-strewn dirt, Chief Walk-on-air opened his eyes.

"Good-bye, old friend," the indian rumbled in a gutteral, hard tone.

Good-bye? Clark sat still, didn't answer. He'd let the chief say what he had to say. Questions only dammed up the thin trickle of communications that came out of the old man.

Old man. . . . I'm an old man too!

"The Big Sky will come and fetch away Walk-on-air."

Silence. The crimson line on the horizon had thinned out and had disappeared. Now the cacti were like shadows. The first stars had appeared and blinked in rising heat.

"This is a bad place for dying. Walk-on-air going south. Far away."

Why? Why is this a bad place for dying?

They sat in silence for a long, long time. Then the chief stirred again.

"White man has a spirit-catcher. Very evil machine. Walk-on-air go south, die, come back to Shashtuk land."

"What do you mean, spirit-catcher," Clark blurted out. He slapped a hand to his mouth, but it was too late. He had disrupted the flow.

For a long, long time he waited, but nothing more would come from the indian. The sky slowly thickened with stars, the Milky Way dusted across his vision when he lifted his head. At last Clark rose.

"Good-bye, old Chief," he said,

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and he walked back down toward the jeep.

On the way home he had a bad moment. Suddenly he felt in the pit of his stomach a kind of burning pressure he hadn't felt in years now, an unpleasant echo of the late eighties when he'd gone through inner hell. He couldn't well imagine that Walk-on-air would actually leave. He was as much a part of Clark's life as—as Betty was, as the arti-caverns with their vats of eternally bubbling hi-rad sludges. The old man—old man, indeed! He was as strong as a bull. Not a thread of silver in his hair. He must have been joking. He was off peyote hunting deep in Mexico. He did that every year. The bag had looked very flat on the ground next to the indian. He'd be back in a couple of weeks, and then Clark would go out to see him again on Wednesday nights as usual. Nonsense about dying, spirit-catchers, stuff like that.

He felt a little better.

Soon he wheeled the jeep onto the surfaced road, gunned it and roared homeward. Betty and he lived inside the compound in the superintendent's mansion that seemed so cavernously large now that the children were gone. When Gerry had visited earlier this summer bringing his whole family with him—all five children whose names Clark hadn't been able to keep straight—they had fitted in with lots of room to spare. After he and Betty had waved good-bye and the big red bus had pulled away, they'd walked back in and the place had echoed like a tomb.

Near the compound Clark noticed that lights still burned in the new-fangled hexagonal security complex. He slowed down and peered inside through the tall barbed wire fence with its outreaching arms. As he watched he saw a man walk past a window, and he caught his breath involuntarily, thinking he'd seen Ted Aspic—or at any rate an old man with snow-white hair who might have been Aspic if Aspic still lived. Clark stomped on the brakes. Wheezing, he got out and leaned against the jeep, arms folded across his heavy beer-gut. He watched the window with a face as stiff as a board. The engine idled at his back. But nothing more happened.

Clark shook his head. He was seeing things. He got back into the jeep and drove on. Guards waved him through. He drove between gigantic silver storage tanks that held the low-rad waste and up toward the artificial hill where the super's mansion stood with its lead-insulated walls.

On the kitchen table Betty had left out a glass of milk and a couple of cookies. He looked at the snack but then changed his mind. He didn't feel so good in the stomach.

* * *

Two weeks passed but the chief hadn't returned. Three weeks. Five weeks. Toward the end, just before he was hospitalized in Perpetual, Clark had driven to the indian's roundhouse every night, although the pain in his gut had forced him to drive doubled-up and Betty had begged him tearfully to relent, to give up, to be at peace, to find consolation in the Twenty-third

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Psalm—which she held out to him, marked with a red ribbon. . . .

"The Lord is my shepherd, I shall not want . . . he maketh me to lie down in green pastures . . . yea, though I walk through the valley of the shadow of death. . . ."

Finally the ambulance came. Attendants took him from the jeep where he crouched in agonies against the wheel. Lights flashed and the sirens wailed. But they sounded far away, as if meant for another.

He lingered on for two weeks more, now up, now down.

In this time he had lucid moments when an easing of his pain and the diminishing action of the drugs they fed him coincided. Food came to him through a tube in his arm. He had lost most of his stomach to cancer; the doctors couldn't understand why he hadn't complained before.

In his states of temporary bliss, he listened to the talk that buzzed around him. The USA had entered the Russo-Chinese war with a brigade of intervention that grew to several armies within several days. Brain-missiles had been dispatched from China aimed at West Coast cities, but a new defensive system had neutralized them over the Pacific. People repeated stories about windstorm damage and tidal waves—consequences of those H-explosions. Then Betty came and chewed back her tears as she held his hand. Good old Betty. Then, one time, nurses gossiped bitchily at the foot of his bed about that new security complex near the compound, saying it was a regular whorehouse, with people paid to make love in there on Friday nights. Inwardly Clark smiled. He knew what went on in that hexagonal building. It was a hush-hush psycho-station, set up here to prevent Chink bombing of those cursed, damned, boiling vats . . . . Well, he'd soon be free of all that and go where you went when it was all said and done. Then, one time, he thought he saw Aspic hovering over the bed in company of a short, bald man who wore thick rimless glasses and seemed familiar to Clark. It was a fantasy, of course, but nevertheless Clark forgave Aspic everything. No point in holding grudges, not any more. Death dissolves everything. And finally they stood by his bed—Fredrick and Gerald, his stalwart sons. One of them wore a uniform. Clark tried to nod to them, to encourage them, but he couldn't move his head.

That night he died and went up into paradise.

* * *

"Fantastic," Aspic said, and by his side Cam Templar nodded.

They stood before a wall completely filled with tiny rectangles, each one closed off by thick, curved panelettes of glass. Minute bits of light glowed inside some of these miniature aquaria, one flame per cubicle—but these lights weren't fish and they didn't swim in water. They were souls suspended in super-cooled nitrogen and held by subtle magnetic fields.

Aspic saw his own image reflected from the curved glass panes, a little bent and very much di-

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minished by the small surfaces. Age sat on him lightly—at least judging by appearances. His hair was completely white by now, but it hadn't thinned at all. His long face was powerfully tanned and gave him a youngish look accented with thin white rayings of maturity around the eyes and a kind of tightness about the skin. While other people wrinkled in old age, his skin appeared to shrink, giving him a haggard look.

He wished he felt as young as he appeared, but he didn't. Now, in this moment of completion, he wondered about the cost of all this—not the money cost, of course. The Feds had provided most of that. But the psychic cost lay on him heavily—all those meetings, all those lunches, all those favors rendered, all that talk, all those trips to Washington, a thousand Congressional hearings, ten thousand backroom discussions.

A new light blinked on and drew Aspic's attention. Almost immediately a telephone rang somewhere. Templar moved off to answer it. The time was early morning and in this part of the complex all the clerical help had retired many hours ago. He watched Templar from the back, a short, old little man. Templar was eight years his junior but looked fifteen years older—white of complexion, fading, nearly blind despite those heavy lenses. After a moment Templar came back.

He pointed to the rectangle that had just lit up, nodded. "That's him," he said.

Aspic watched the micro-flame. He was thinking about motives.

All around him sprawled this complex, the first of its kind in the world, the only one of its kind. Its evolution and development had taken three decades, some of the best physicists in the world, a tremendous amount of public money, and all of Aspic's persuasive powers. It worked. It was the culmination of a life of labor. And yet it was just the first step. Many such centers would be built in time. The Perpetual Priesthood would rise from these centers, would be replenished through their mediations—provided, of course, that the goddamned war didn't stop progress altogether. The war had come at the worst possible time. From now on a man wouldn't get a hearing in Washington about domestic programs. Best to lie low, in fact, lest someone discover how much this facility cost to run and the kind of talent it employed. The budget cutters would have a ball despite AEC protests. Lie low. Take a vacation.

Yes, he'd take off, get away from all this. The job was done. The motive that had started this ball rolling had been satisfied. It burned there, that tiny little thing. Clark, or whatever was left of the man. *He* had triggered the idea, he and some acid memories of a concentration camp. And now Clark sat in his own little prison. He glimmered in there, longing to incarnate, tortured by desire, sensing the copulations of the entire region in the air . . . but he couldn't dissolve himself in flesh, he'd have to hang there suspended between two existences—a spiritual terror of unspeakable menace, according to Templar. Templar knew these things.

Sooner or later, Aspic told him-

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self, it was bound to happen. Sooner or later someone was bound to learn to control soul energies. And we did it, Cam and I!

Nothing mysterious, really; just the same old physics in another guise, just the same old mathematics oriented to another dimension.

Not that they knew much about it, Aspic reflected. They had found the tip of the iceberg. They knew how to hold the souls and how to condition them to some extent. When it was all over, Clark, or whatever was left of Clark, would have a powerful compulsion to stay near radiation wastes. He'd have an abiding love for the stuff. He'd worship it. He'd feel possessive about it. He'd seek it out wherever it occurred. His senses would guide him to it.

Or that, at any rate, had been the outcome of some experiments with short-lived fruit flies. You couldn't generalize too much, of course.

"How long have these been incubating," Aspic asked, sweeping the wall with a gesture. Thirty little flames burned behind glass. Not counting Clark, all the deaths had occurred within a fifty-mile radius, the range of the magnets. They were all sexually screened, all of them souls with masculine tendencies.

"It varies," Templar said. "The oldest ones are two weeks old."

"So tomorrow. . . ?"

"Tomorrow we'll incarnate them. We've got another batch of volunteers assembled, so it should go smoothly."

"Las Vegas tourists again?"

"Mostly," Templar answered, "although we've had to reach farther out this time. The war. . . ."

"That damned war!" Aspic exploded. He reached up and rubbed his eyes with long, slender fingers. After a moment he turned to Templar.

"Tell you what, Cam. Now that we've got Clark on ice, I think I'll take a nice, long vacation. Don't do anything with him until I get back. I need some relaxation. These last few months. . . ."

He clicked his tongue and shook his head. "I think I'll head south. Mexico City, Caracas, maybe Santiago. Thank God the war is still a northern phenomenon. Meantime we'll just let Johnny stew. It's the least I can do for him." He grinned suddenly.

"Don't overdo it," Templar warned. He took off his rimless glasses and polished them with a handkerchief. "We don't know how long these little pulses last." He inclined his head toward the tiny votive candles behind glass. Then he looked at Aspic, his eyes a little out of focus. "For all we know, they might go out."

"So?" Aspic said. His dark, watery eyes were cold. Then he continued in a changed tone. "They don't go out. None of the experimentals ever did. Whatever those little things are, they're tenacious." He reached out and touched Templar on the shoulder. "I know what bothers you, old man. It's the torture. You've got a bleeding heart, my friend. Well, let me tell you something—"

But Aspic interrupted himself. He wouldn't talk about *that* any more. It seemed a little odd to hark back

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to an experience that he, Theodore Aspic, had never really had.

"I'm not criticizing, Ted. Just . . . don't overdo it."

"All right, all right," Aspic said a little irritably, holding up his hands. "Let's get someone to put Clark on conditioning and call it a night."

* * *

Four weeks later Aspic drove toward Mexico City from a suburban estate in a rented Cadillac. He sat in the back with two young things he had hired for the duration, and now they were gigglingly messing inside his fly while the chauffeur drove behind a pane of glass. The headlight beams lifted squat, thick trees out of the on-rushing murk.

Aspic sighed. He felt the old excitement, but it was entirely in his head. Down below nothing responded. He reached for the speaker. "Faster," he said, "Faster, faster." The chauffeur increased the flow of gas.

Aspic leaned back, closed his eyes. He conjured up memories of women he had possessed, went back and lingered on details. But it wouldn't work tonight. He was too tired, the party had been a bore, he'd drunk a bit too much.

He opened his eyes just in time to see an ancient indian step out onto the road from behind a tree. Instinctively the driver jerked the car to the left . . . too far . . . back again. Tires screamed in some kind of terror. Everything went up and down and sideways and lights and glass and stillness and dripping oozing wind moved grass next to Aspic's face.

V

CLARK—WHO WAS NO LONGER Clark but someone else—had to wait until his new brain had developed, until he had learned to walk and talk and all those things. And even then he had to hide his curiosity so that his parents and playmates wouldn't think him weird. By age three he secretly read old books that had chanced into the hands of these backwoods people. By age four he discovered at last which century this was. Chance had brought a town circular into his hands at the May fair, and he noted with great wonder that it was the 23rd century, midway *through* the 23rd, 2256 to be exact.

How time doth fly. . . .

Let's see now, he said to himself. I've been up there 250 years, which is something of a record, I'd guess, considering that most souls don't last more than a month in paradise, maximally speaking.

He didn't confide his discoveries to anyone. He bided his time out there with the herds on the mutagrass prairie. At age fifteen he ran away from home, old enough and strong enough to fend for himself. As for experience, he possessed that of ten life times.

His current name was Tankers Jack. His father's name was Justins Tanker. They had called his grandfather Portos Justin . . . and so on and so forth. His mother's name was Tankers Two and people called her Twodie. She was younger than Tankers One and older than Tankers three, and she ran away at age thirty-five and became Wallies

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Oneish. Wally was a mutant and couldn't be choosy.

For reasons he still couldn't entirely comprehend (birth had disoriented him slightly), he had selected for himself a slender, longish body with sensitive digits and large, dark, moist eyes. He took after Twodie rather than Justins Tanker, a large, bony man who never spoke except with fist and boot but could toss a lasso with the finesse of a 20th century conductor urging *pianissimo*.

Jack knew all these people—from *way* back.

His father had been his grandson in 18th century Turkey. His mother had been his husband in revolutionary France—although at that time Jack had been a Jaqueline. Others in the village also belonged to his circle. He had been drawn down to them—to Betty, who was the Healer's ageing mother and who'd soon make the passage again; to Freddy, his son, who'd surfaced as his brother; and yet others he had known, closely or remotely, in many pasts. He recognized them instantly given his third eye—an invisible 'eye,' to be sure, not one of those mutant aberrations.

But he hadn't seen Evelyn anywhere, and above all he longed to see her. He knew he'd see Walk-on-air again. Besides it didn't matter. Walk-on-air was everywhere.

* * *

He arrived in Perpetual, New Mexico five years older and much wiser about the 23rd century.

He came in by what was left of the ancient road, a young man with a flashing eye, black hair. He wore a tall, round hat with a stiff, wide rim. His legs and lower body were wrapped in long strips of rough, grey cotton tied at intervals with leather bands. His trunk was covered by a woven blanket with a hole in the center for his head. Around his shoulder hung a carry-sack and from his left ear a golden ring.

He walked toward Plutonium, a tiny figure next to the monstrous construction that now occupied the site of the coumpound: a proud monastic fortress of tremendous pods and walls and parapets, circled with moats of steaming atomic lava, drawbridges over the moats, pennants on the pod-tips, and a bright glitter of prayer ribbons in the wind. Crowds of pilgrims waited for entry next to one of the bridges, and Jack saw people from all corners of this region. He saw monks in twentieth century garb, a shockingly nostalgic sight amidst this primitive but powerful architecture. In twenty years Jack had become accustomed to cowls, jerkins, wrap-me-ups, and—if you were rich and a townsman—embroidered, ankle-length coats.

Perpetual itself, five or six kemits beyond Plutonium as the carry-crow flew, was 'perpetual' in name alone, for nothing had remained the same except a bit of the layout. A city wall ringed the place, but not as massive or as well maintained as he'd seen elsewhere on his travels. Perpetual needed no protection, not with the monastery nearby.

He stopped at the very first inn he came to, the House of the Nucleon, complete with a hand-painted

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sign out front showing little flames moving in a spiral.

This being afternoon and the place empty, the proprietor himself took an interest in Jack, served him a foaming mug of warmish beer and talked about Plutonium, his elbows on the bar.

The place was unique, the proprietor said. No other monastic foundation like it existed anywhere on earth, the man said, setting Jack to musing.

By "earth" Jack knew the man to mean the continental United States, the North American *land*, for the institutional thing had passed away in the wake of the Russo-Chinese Intervention, soon after the brain-missiles of all the nations had learned to communicate telepathically and had conspired to bring the whole damn rotting mess down in one glorious Armaggedon. Well, they had both failed and succeeded. The old world had suddenly passed away. But Man had survived and began to fill up all the spots again. Too bad for the Old Order. It had been much more varied and rich than this primitive culture of towns, herdsmen, farmers, and brigands. But Jack couldn't blame the brains, not really. What is a man to do when he can sense and think and feel and desire—and has a missile for a body?

He returned his attention to the Inn's proprietor who, in the twentieth century, would have been urged to try Scope. The man was telling him about the marvellous power of Plutonium to attract disciples. The life up there was hard and dangerous. They didn't touch women and lived in narrow cells just barely wide enough to let a man lie down. Many of them died from strange and mysterious sores. It was known all over Shashtuk country and well beyond. Yet young men came from all over, about Jack's age, usually, and they had a burning desire for that life up there. "God is great," the proprietor said, bowing his bald head rimmed by black hair.

Then he looked up and asked Jack if he was one of them.

"I might be," Jack answered with a smile.

"Those who are, *know!*" the man said seriously.

Jack made a note to remember that when he approached Plutonium's masters. He recalled the compulsion-creating conditioning process of his early days of spirit incarceration. But that compulsion had been wiped away by the existential terrors he had experienced during months of suspension between two lives, the very experience ancient catholics must have had in mind by the fires of purgatory. He had been purged, all right. His energy identity had been forced to contemplate itself, hour after hour, through what seemed a handful of eternities. He'd come to memorize his past, to imprint it indelibly on his deepest awareness. Then someone had released him at last. But instead of incarnating with alacrity, Jack had careened off into the very stratospheres of paradise seeking recovery from his tortures. Fearless now, he had plunged into the very center of the white disc of light and there, abiding in healing solitude, he had seemed to be in company of Walk-on-air. By the

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time he emerged to incarnate again, quietly, deliberately, one quarter of a millenium had passed away below.

He took a swig of beer, wiped his mouth with the back of his hand, and said: "I have no money, innkeeper, but I'm a scribe."

"Welcome, welcome," the man said, bowing. "Feel at home, Tankers Jack. I'll pass out the word and you'll be drowned in business. The last scribe came by more than a year ago."

The proprietor rubbed his hands with pleasure. Such luck to snag a scribe. His house would be full for weeks. He led Jack personally to the very best room in the house, lovely with its blue-white wallpaper obtained at great expense from a travelling merchant. The bed—a double mattress; three pillows; and thick, fluffy Harvey pelts for cover against night-chill.

Another significant change between that time and this, Jack noted, his eye on the milk-white pelts of the rare, disappearing giant rabbit. The sun seldom peeked through the overhead murk; volcanic ash and sediment circled up there around and around the globe. It would take centuries to restore illumination to its ancient maximum. It was cold in New Mexico, even in June.

He waited until the proprietor had left. Gazing after the man, it occurred to him that the bald fellow might be Cam Templar, Aspic's astrologer, but he couldn't be sure, having only met Templar once, long ago, in Washington, D.C. If it *was* Templar, he had certainly come down in the world, karma-wise. The man's head disappeared down the stairs, and Jack closed the door.

He took binoculars from his carry-sack—he'd found the instrument in the never-used bomb-shelter of a destroyed estate far to the north, where the ice starts. He walked to the window. He lifted the binoculars toward Plutonium on the horizon and searched the monastery's silhouette until he spied, barely visible, six baskets of wire high up between the pods. Passing by the massive complex, he hadn't been able to see them. But they were there.

Once upon a time he had thought them radar dishes.

* * *

After four days of reading and writing letters—hundreds of letters—Jack decided to take a holiday. His earnings had been good, the people generous. They liked the way he dramatized the messages from relatives far and wide, the way his eyes twinkled when he read funny things and the way his voice choked up when he catalogued woes.

The Innkeeper hired four extra girls to keep the beer and the meat flowing, but all too often he caught them dreamily admiring the scribe from the edge of the perpetual circle of people around him. He also suspected that they slipped into his room at night for more substantial samples of his passion—but the Innkeeper need not have worried or envied, whichever it was. Jack waited for one girl and only one. He thought he'd earned her affection at last, and the mysterious forces of cosmic magnetism would

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sooner or later sweep her into his path.

He borrowed a horse from the Innkeeper's stable and rode away in an ancient direction toward nightfall. He had chosen a Wednesday night for this venture—for old times' sake.

The horse plodded forward wearily, its heavy head going up and down, tired from dragging shaped concrete slabs all day from a nearby gorge overpass ruined ages ago but serving now as a kind of quarry. In its place now hung a spidery rope-board thing, a graceful curve above the abyss.

Up above the moon was a diffusion of light in an atmosphere loaded with suspended particles. Down below the ground was far more lush, a swaying grass-scape, a rolling prairie of mutagrass.

In place of the upright cacti Jack found a willow with its hair hanging low. Near the tree sat Walk-on-air, an ancient, wrinkled indian with jet-black hair pulled into a braid in the back. His eyes were closed. He sat facing the spot where the setting sun had caused a dirty brown line of light between sky and ground.

Jack dismounted and sat down near the chief to wait.

After a while the chief opened one eye. It twinkled merrily, its white a little yellow. He opened the other eye and broke into a huge grin.

"Hello, old friend."

"Hello, Chief Walk-on-air."

"You've done right well for yourself," the chief said, gesturing toward Jack. "A nice combination you've concocted. A bit of the gypsy in you, a bit of the hero, nice and slender but strong in the wrist and the arm; your eyes are very expressive, and the nose hints a little at carnivorous birds. That golden earring gives you a mysterious air, the lips are sensuous to the right degree. The hair is straight, yet at the ends, it has a kind of graceful curl. No doubt you're an accomplished singer, swordsman, and story-teller too, can read men's palms and see the future in goblets of dark wine. Am I right?"

"You know everything, Chief Walk-on-air."

"On the contrary, Tankers Jack—a kind of racy name, that, I must say. No, no, my friend. I wallow in blissful ignorance. She's always unfolding, always unfolding like a flower that forever germinates into the future. There is no end to her mysteries."

"Who is she?"

"The Cosmic Flower, the Absolute Change."

"I thought there was nothing beyond you, Chief."

The indian laughed, his head thrown back. He was thoroughly amused. He chortled and chuckled.

"Tankers Jack," he said at last, wiping his eye, "you're an incorrigible Barbarian. You've been inside the brilliant light—yet you returned to earth. For what? A woman. Right?"

"You have all the answers, Chief."

"Listen to me, old friend. Do you know what happens to people who go into that brilliant light when it appears in paradise? People who don't get frightened and don't shy away toward the red of the spectrum?"

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"I don't, Chief."

"They become angels, Tankers Jack. They go up into higher lives. They turn into planets and suns. But you—you came back for a woman. And then you ask *me* whether there is anything beyond me. I also worship a woman. There is always something beyond. Otherwise we'd all curl up and die."

Jack's horse blew air through its nostrils with a low blurb and stamped a leg.

"Since I have, as you say, thrown away a chance at angelic existence," Jack said, "let me turn to petty practicalities. When will I see her?"

Chief Walk-on-air laughed. "What's the hurry, Jack? You've waited three hundred years or more. What's a decade or two or even a life or two."

"Chief," Jack said tensely, nearly rising from his cross-legged position, "don't you tease me. I couldn't possibly wait decades—much less lives!"

Chief Walk-on-air chortled, bubbled. Tears ran down his wrinkled cheeks. He pointed a gnarled finger. "Look at you," he said, "just look at you. I can't get over it. Here you are, all got up to kill, a heart-throb. My God, Jack, how do you keep the ladies from your bed? But when I see you, I see old Clark sitting there like a pile of misery, his beer-gut coming out to *here*! Oh, Spirits, oh, Flower!"

"When?" Jack demanded crossly. He felt totally at ease with Walk-on-air. They had shared an eternity together in the brilliance.

"All right, all right," the chief said. "How can a god refuse anything to a mortal like you." He narrowed his eyes half mockingly. "The time is ripe. It'll happen soon. But there is still a wee-little-bitty bad karma clinging to you, Tankers Jack. You haven't scraped away quite all of it. Those spirit-catchers are still up there—and you're responsible for them. A word to the wise. . . ?"

"And then?"

"And then the nefarious and strange ways of the Lady Flower will guide you in magical ways into her presence," the chief pronounced. "After that it'll be up to you, of course. I can't guarantee a thing. I wallow in blissful ignorance. I sit here and wait for the next marvel that may drop from her hand."

"Why here?" Jack demanded. "And why sitting? Why don't you wander about like I do. You see more things that way."

"Because," the chief said, and he grinned broadly, "because you're just a young god and I'm an old one. One or two stories a millenium are quite sufficient for me. The doctor tells me not to get too excited, you know. If I overdo it, I might become an angel."

With that the chief threw back his head and laughed most merrily.

VI

THE SIREN SHRIEKED and echoed through the intricately laid corridors of Central Pod. It called upon the brotherhood to rise. Plutonium's day had begun.

Jack awoke with a start and almost sat up straight. He remembered himself in time and, accus-

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tomed to the maneuver by now, he slid from his vault-like chamber feet first. He landed in the corridor and reached for his clothing. Monks dressed on all sides of him, slipping into jeans, shirts, sweaters, or sweat shirts—the obligatory uniform of the monastery.

It was Jack's fifteenth day in Plutonium.

He had arrived, had slipped into the monastery almost without notice, just another novice, just another compulsive come to seek satisfaction at the bosom of God. He had come, but he had not yet conquered.

This day, the fifteenth, would roll by like the others. And then would come another. and then another. The ordinary mortal, Jack told himself, would long have lost his patience with all this and told his precious karma to go hang, but he was not an ordinary man and so he stayed on, waiting for his opportunity.

He dressed, like the others, and took an inventory of his situation.

Many levels above him, sealed off by guards, was what the monks called The Mystery. Many levels below him, in the ancient artic caverns, the members of the Hierarchy would now be preparing for the one and only ceremony of the day. A few levels above them, at ground level, others of the Hierarchy would be cutting bread into small pieces for the breakfast that would follow, a humble, monastic meal. A hundred kemits to the south of here, a monkish caravan would be loading tents and setting the missile into motion again. The missile, so he understood, rested on two long carts tied end to end, and the carts were drawn by sixteen oxen. The missile, presumably, would be chattering in its mad way.

That described his situation fairly concisely.

He finished dressing and wondered how long it would take for sixteen oxen to cover a hundred kemits. Ten days? Twenty days? He hoped it was ten days at most. Even a man with the patience of Job would want to escape this lunatic complex—especially if a girl awaited somewhere in the future beyond the moats of Plutonium.

Jack joined other monks and walked along the corridor toward spiralling stairs that led to the depths beneath the complex. This corridor, like those in most buildings nowadays, coiled unpredictably through the building. The total darkness was eased only by ancient phosphorescent paint, delivered here ages ago for disposal, which these latter-day guardians of radiation had smeared liberally on the walls. The paint bathed corridor and monks in an eerie, greenish light.

The missile bothered Jack in more ways than one. On the one hand, he might be counting on it far too much. On the other, it *was* a missile. The brain in it was still alive, and if the brain lived its other parts might still be functional. It was a legacy from the twentieth century, a token affection sent down through time. He couldn't even start to guess how the brain had survived. Few mechanical objects had escaped the ravages of time. Cars were heaps of rust, batteries dead, ballpoints dry. Only Aspic's Mystery still ran, that much was

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evident—and this nuclear bomb lifted by sweepers from a lake in what had been Texas. They had made those babies to endure, Jack reflected. They probably ran off solar energy with a sealed-in life-support system to maintain the brain-mass, a super-duper stainless steel ecology—and now it jabbered nonsense through an amplifier attached to its underside. Take that back. It didn't chatter nonsense all the time. From time to time it pleaded with its finders to drop it from a mountain onto rocks. When it was sane, it wished to die, in other words. When sanity left it, it spoke about Armageddon, a woman named Hester, and a child called Tom.

What *hath* God wrought!

Jack reached the stairs and went down, hands on the railing. His mind continued to turn around the missile.

Word of the thing had come three days ago. Excited messengers had burst into Plutonium with the good news. A group of sweepers had discovered a Godbod larger than any found heretofore. On top of that, *this* Godbod had a voice and said odd things—prophecies, some of the messengers claimed; others, more sober or less imaginative, said it merely spouted odd gibberish. Jack had gone to interview all the messengers he could find, and with some reluctance had concluded that the thing was a brain-missile all right. Now, going down around and around the spiral staircase, he wondered if he had miscalculated the effect it would have.

News of this Godbod had sent waves of shock through Plutonium. Most of the ordinary monks lived in total idleness. They neither spun nor wove. The first hour of the day was structured by the ceremony. Thereafter, unless a man belonged to the Hierarchy, he could spend his time any way he wished. Plutonium by day or night was a savage battlefield of roaming gangs. Battle-sounds could be heard throughout the complex, cries, blows, running feet, the heavy breathing of men. The victors usually raped the youngest of the vanquished. Such would be the fifteenth day, such had been the first, the second, and all the rest—with one exception.

On the day when the messengers had arrived, Plutonium had buzzed like a hive stirred by a stick. News of a talking Godbod had put a stop to the usual amusements of the brotherhood. Men had gathered in excited clumps, discussing the event, and groups had formed spontaneously to plan the reception. Jack had concluded that such excitement would be magnified many times when the missile actually arrived, and while the brothers swarmed out to greet this new find, he hoped to be upstairs, communing with the Mystery. He hoped, at least, that security upstairs would be greatly relaxed. Otherwise, as he had discovered, it would be nearly impossible to approach Aspic's satanic machine.

But what if they didn't relax the guard? What then?

From down below Jack could hear the roar of voices. The monks gathered in Cavern B, as it had been called in the old days, the largest of the storage areas. By the

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time Jack reached the place, the cavern had filled up with monks, a huge assembly, a sea of heads moving and humming. Above them he could see, in the distance, the abbot and several ministrants preparing for the ceremony. Baskets of hot rocks stood on the platform, and ministrants arranged themselves beside them. The abbot, wearing asbestos gloves, placed a silvery canister centrally on the altar. Torches stuck into holders mounted on the wall behind him threw the only light in the cavernous, echoing room. Their flames reflected on rows of vats on either side. Hot sludges boiled and bubbled inside those giant pots, just starting on the first leg of that 250,000 year journey toward ionic exhaustion.

The abbot raised his hands high into the air. A hush fell on the monks. The best part of their day would now begin. After the chanting and the reading were over, the ministrants would bring the baskets through the throng. Each monk would take a rock. Ceremony called for a ritual kiss followed by a touch of forehead, throat, navel, and gonads with the rocks. Most of the monks went well beyond this requirement. They hugged those clumps of mineral. They rubbed them over their bodies. Contact with the rocks, which had been exposed to high-level radiation, satisfied some deep need in these miserable men.

Jack noted his own position and moved to his right, toward the wall. In the center of the throng, the ministrants would certainly pass closely by him, and he tried to avoid what all the rest had come to enjoy—exposure to the radiation. He felt a surge of pity for the monks. He couldn't help them. They had been conditioned, once and for all; their bodies needed something biology knew nothing about. But future generations had to be protected from this obscene slavery. Jack wondered briefly whether it was really true—that he, himself, by a series of rash acts in a concentration camp, had set in motion the horror he witnessed on every hand: these savage men covered with sores and lesions. Could one man, with one act, leave such a legacy of trauma?

The abbot started chanting in a reedy voice, and an ocean of voices answered him, a deep, male lowing that rose and fell. Jack looked up and watched the altar. From his new perspective by the wall, in uncomfortable proximity to one of the vats, he could now see a large group of monks on the platform. They were sweepers awaiting the abbot's blessing before setting out. Each carried a small box, sack, or bottle. Discovery of the missile had put new vigor into sweeping. Now everyone was eager to find a Godbod even more magnificent than the talking needle.

Jack eyed the sweepers on the platform. Sweepers had been his first encounter with Plutonium. He had seen them in all parts of the country during his wanderings, wretched creatures combing the countryside, sniffing for radiation as they went, trusting their compulsions to lead them to the holy stuff wherever it was, however deep or however high, yes, even on the bottom of lakes. They carried bits of

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hot stuff with them. Without those bits of inoculation, compulsions drove them back to Plutonium. He had seen them huddled beside ancient freeways in miserable camps; he had seen them begging food, standing in the middle of village streets, and he had seen women throwing them bread from a safe distance. The common people understood Plutonium in their way. They knew that sickness followed the monks. They hurried them along, out of the hamlet, away from the cattle. Holy sickness, to be sure. But move along, please.

The chant died out in a final, multitonal hum, beautiful in its way—would have been beautiful had Jack not known the unholy desire that gave it such feeling. Across the distance from the altar now came the abbot's voice, reading the scriptures. The echoing hall swallowed some of the words, but Jack knew what the abbot was saying. He spoke about God's ineffable presence in the room. He blessed this Holy Interface where divinity was operative. He spoke of vigilance and of the evil world without, where Godbod's holy emanations didn't reach. The words were lame, without much cadence. A contractor's analyst had written the text trying to beat a deadline, no doubt. But neither scriptures nor dogma mattered much, Jack knew. The real faith burned in the monks' entrails—an implanted compulsion. The software didn't play a role so long as the hardware worked. When your innards wrench and tear you, you don't need much of a theology.

Jack could feel the growing excitement. Greedy eyes devoured the baskets from a distance. The reading would be over soon. Jack slipped away, between two vats, and sought the deeper darkness of a recess in the wall. He pressed into it and felt, against his back, heavy studs that, in the old days, had held the radiation shields in place. They had been removed, of course. From this vantage point he could glimpse, between the vats, the progress of the ceremony, the pathetic antics of the monks, the vigilance of ministrants.

Theft of an irradiated rock was considered a capital offense. Once a day, and once a day *only*, were monks allowed to feel the particles—granted, of course, that the whole hive was hot, up to the very last pennant cracking in the wind above the highest pod.

The ministrants came down and then moved back, collecting the rocks as they went. Jack faded back into the crowd and watched the abbot lift on high the shining canister in a final blessing. Then he turned and blessed the sweepers, whereupon a ministrant approached them and handed over bits of Godbod for their boxes, sacks and bottles.

The ceremony was over, but the monks stood their guard, not a man moving. It was like this every morning. They felt the Lord's peace in the cavern. They didn't want to leave. The vats threw out emanations, and they gloried in the feeling. But enough was enough. The ministrants now turned policemen and began to press the crowd toward the exit carrying clubs in their hands. Jack felt a surge of hunger. He went out and up the stairs toward the eating halls.

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* * *

Jack sat on a bench against the wall next to some monks he knew. These men were of the pious sort, a small percentage of Plutonium's population, simple creatures who took the doctrine seriously, shunned gangs, and spent their days in little prayer chambers strewn about the complex reading the scriptures hung from the wall by chains. Jack had associated himself with these men. His piercing look and a regal manner he had assumed had protected him from violence and rape. He put about also that he was a Hierarchy spy, which helped. But he found it best, like any other beast of the jungle, to fade into a herd of others to fend off predators. These men were the least offensive of all those in the hive.

Jack munched his piece of bread and a single carrot. He turned to the man on his left, a whispy creature by name of Johns Jim.

"Jim," he said, "any news about the Prophet?" ("Prophet" was one name for the new discovery, "needle" another.)

"I don't know," Jim said. "You should have better information." He whispered: "You're with the Hierarchy. But I feel it," he continued in a normal voice. He pointed to his stomach. "I feel it here. It's coming closer."

"How many days do you think it'll take?" Jack asked.

Jim didn't have a chance to answer. At that moment a man burst into the room to their right and ran between benches toward the only table in the hall, to their left, where the abbot sat taking his breakfast flanked by high officials of Plutonium.

The man was tall, haggard and, although he wore dark clothing, it was evident immediately that he was blood-stained. His eyes shone with a kind of craze.

He arrived at the abbot's table and leaned across it without the customary handshake which, no longer used as a form of greeting in the twenty-third century, was still an obligatory courtesy in Plutonium.

Jack saw the man whispering to the abbot, and then the abbot fell back in his chair as if he had sustained a blow. In a second he, in turn, whispered into the ear of his cheif aide who, in his turn, gave evidence of shocked dismay.

The two men rose and gestured to the leadership. Then, in a body, the whole group left, taking the haggard man along.

This brief scene caused unusual excitement in the brotherhood. The monks occupied several halls the size of this one, strung out end to end in a circle along the girth of Central Pod. The word spread quickly through all the rooms, and in minutes excited groups had formed, discussing, speculating. Men were sent running to check with their contacts in the Hierarchy. To Jack it seemed like a replay of the scene some days ago when the missile's discovery had been announced.

A half hour later—the monks were still milling in the eating hall—the word finally filtered out. Johns Jim, who had run off to consult with the deputy assistant theologian, a friend of his, brought

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back news to Jack's group. His thin, grey face was long as he approached, his mouth half open in the anticipation of speech.

"They stole it," he called before even reaching his group. "They got it. They're all dead. It's gone."

The pious monks enclosed him in a circle. Then, in fits and starts, the story came out. A large armed party of unknown affiliation had attacked the triumphant caravan bringing the needle home. The monkish escort had been slaughtered. I alone am escaped to tell thee. That, in essence, had been the haggard man's story. The world had intervened and stolen Godbod, Plutonium's most cherished capture in a hundred years.

Jack cursed inwardly at the news. He saw his plans for action foiled. No missile, no excitement. No thronging mass would leave Plutonium to meet the double-car and the sixteen oxen. His face, like that of the others, turned long and sad, but his sadness came from another source.

Then, in an eye-wink, the situation changed abruptly.

Movements in Plutonium were coordinated with a siren, a hand-cranked affair. It announced the morning service and also feeding times at noon and in the evening. In fifteen days Jack had heard only a single siren, a very unpleasant sound, but tolerable. Now, slicing through the air toward him came the sound of several sirens, all operating at a different pitch. The sound was so piercing he involuntarily covered his ears and bent his head. This was a new phenomenon. He divined at once that it was an emergency call. He had judged correctly. The monks around were electrified into motion. They ran for the exits and crashed through them, nearly trampling one another. The eating hall was suddenly empty. Only Jack stood against the wall, his eyes on a sea of wooden benches.

The sirens stopped as suddenly as they had started, and now he could hear the thunder of feet descending stairs. The floor of the hall trembled slightly from multiple impacts.

He waited until the sound had died down. Then, with cool résolution, he turned and went the other way, up toward the roof of Central Pod. He knew that his chance had come at last. The waiting was over, and he could act.

He saw no one on the stairs going up. No one in the corridors that led toward the Mystery. Jack couldn't believe it, but it was true. He had been prepared to deal with opposition if he had to. Ten lifetimes had taught him many murderous arts. But there was no need. When all the sirens were let loose to wail through Plutonium like desert ghouls gone mad, all men were called from their posts, apparently, even those above, those who had blocked his access in days past.

He walked freely into the restricted area. He stood before a door. On the other side of it he heard a faint hum, a hum he hadn't heard in this era. He looked to right and left. Still no one around. His hand depressed the handle. The door opened a crack, then more, then all the way. He stepped in.

Consoles stood around the room—a room that had been

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moved, intact, from the ancient security complex to the top of Plutonium by God knew what exertions or when. Here electrical lights, presumably fed from nuclear reactors made to last, glowed dimly overhead. The floor was plastic. Bright metal gleamed everywhere. Against one wall scores of tiny flames glowed behind glass paneletes. They gave Jack a nauseous pulse of remembrance.

His eyes a little wild, he looked about and found what he needed, a large polished rock used as a paperweight on a desk. He took the stone and went toward the panels. He hesitated before setting to work. He was about to destroy a strange, unique technology, perhaps Western Man's last great breakthrough. It might never be invented again. It would be a loss to Science, the science of some future. But his hesitation was brief. Tiny flames flickered before him, souls in transition, karmic fires. He took a deep breath and began to free them, one by one. Broken glass fell at his feet and cold gas hissed around his hands, covering his arm with artificial rime.

VII

Discovery of the savage destruction went through Plutonium like another great convulsion. By that time Jack had long disappeared into the country, clad like a scribe again, humming a tune, longing for Evelyn, and glad that the missile was lost somewhere to the south. For that reason, he went north. Monks were sent out to capture the criminals, but they found only pious ladies bringing baskets of alms and simple pilgrims in their tents. The Hierarchy, meanwhile, met again to ponder alternatives.

They were horror-struck and knew themselves mortally wounded. The Mystery, and it alone, replenished the priestly ranks. It was the heart of the cult. They tended the machinery with loving care. In ample store rooms thoughtfully filled by Old Order founders, they could always find the part needed to keep the panel lights green. Most often a wafer failed; sometimes a wire had to be replaced; more rarely a gas canister would run dry and a full one had to be snapped in its place. The Hierarchy had calculated that five centuries could pass before the warehouses were empty.

But now they saw the Mystery in the paroxysm of death. It smoked amidst a wreckage of metal and glass. A storm had passed through the warehouse. A fire still raged in one end of it, filling the space with poison fumes. The cult would surely die—especially if some upstart group had a Godbod that spoke strange prophecies.

After some days of agonized consultation, the abbot decided to mount an armed excursion—to recover Godbod; the Mystery was beyond help. Plutonium organized for war. The monkish army, ten thousand men or more, each carrying a bit of Godbod, led by the haggard messenger, moved south to the scene of the crime. Here investigations were ordered, and after some days the army wheeled north. It picked up the cold trail of the thieves.

The trail was difficult to follow.

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The leader of the enemy, a man described as short, blond, sturdy, wide-faced, and steady, had not been recognized by anyone in the area. He had come out of nowhere, he and his men. People guessed he was a war chief attached to a city. They inferred this from the discipline of the men he led, the quality of the cloth they wore, and the system they had devised to move the giant needle toward the north.

The leader had abandoned the carts and the oxen. His men had placed the needle into a large net suspended between twenty-four horses, twelve on each side. Soldiers rode the leading and trailing animals on right and left. This method of transport was faster than the one the monks had used. The group travelled off the beaten paths. Plutojacks had to seek reports of them. Few had seen the odd if memorable group, a swiftly moving, silent band—silent but for the silver needle in its hammock which, by all reports, continuously spouted gibberish.

As the monkish army moved, it lived off the land. Discipline was difficult to enforce. The population in its path grew fearful and mounted resistance. But slowly, like a radiating locust herd, Plutonium groped its way north.

* * *

The leader of the thieves was Alans Shepherd.

In his twelfth existence he had accumulated much merit by a life of service in the cause of justice, the culmination of a long series of evolutions to ever higher vibrational spheres. But in his thirteenth incarnation, as a physicist in what was then the United States (of fading memory), he had indulged a passion for vengeance and had loaded himself with heavy karmic debt.

In a succession of lives since then, brief and violent lives they were, he had sunk ever lower, unable to stop his downward drift, until this time, in his Shepherd incarnation, darkness enveloped his awareness to a significant extent, and only bits and pieces of earlier light came through the chinks of his moral obscurity.

One of those bits of light, though he didn't know it, emanated from his chief and sovereign, Zeronica, once his daughter and once his mistress, and other things besides in a long existence that went back to the Crusades.

She alone, of all the folk he knew, aroused in him a dim memory of something higher, and he had served her now for several years, doggishly loyal, uncharacteristically mild.

Returning now with his prize of prizes, he gave himself a little hope, just a tiny bit of hope, that she would reward his loyalty at last. With this final act, he would make her foremost among the leaders of the world. Now he would deserve the reward she had promised him, years ago, in the shadow of the ice. If she refused him this time, he didn't know *what* he would do.

Spurred by such motives, he drove his men to great exertions, and the group reached Phoenix long before the plutojacks had even organized for systematic pursuit. He entered the city gates at night, in

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secrecy. His men slipped the Godbod into the dungeons beneath the Presidential Pod. She came to see it that same night, a cloak about her night dress. Godbod was sleeping at the time and she couldn't question it. Messengers had told her about the miraculous voice. Her manner, as always, was aloof and cool, and Shepherd went to bed that night with the bitter taste of disappointment in his throat. He tried to console himself saying he was a man of power and influence second to none in Phoenix. But the thought gave him no solace. In her presence he was still a bandit, and though he never let the thought flit across the surface of his mind, he knew that her eyes ruled his, now as ever. He tossed and turned on his lonely bed. She hadn't even greeted him. Her first words had bit his soul deeply, opening wounds. "I didn't know," she had said down in the dungeon amidst torch flickers that echoed back from the dull gleam of Godbod's hull. "Is this *all*?" she had asked. "It's just a piece of metal, isn't it?"

She herself had demanded of him year after year, for three years at the least, that he should capture for Phoenix the one thing it lacked. Now that he had done it, she called it a piece of metal.

The next day she had a sitting basket hung from the ceiling in the dungeon. She sat beside the needle and tried to hold a conversation with the awakened spirit within. This went on for two days. Then she sent for Shepherd and discharged her frustrations into his steady face, angered by Godbod's incomprehensibilities.

"You should've let the plutos have him," she said to Shepherd at the end, her voice dripping with contempt. "He, he—" She gestured at the needle, slapping the air with a hand slack at the wrist. "This is no god, Shepherd! Can't be. Maybe it's just one of those talking machines the old books tell about."

Back in his own quarters, Shepherd kicked the mutants. He stayed within for three days, drinking. He recalled his carefree life beneath the ice and cursed his fate.

* * *

Two weeks later the war caught up with Tankers Jack.

Rumors had preceded it and had already set him to wondering. He was staying in a small village when plutojacks over-ran the hamlet. Jack escaped the worst of the killing. He knew the code words of the priesthood. He mingled with the band as it departed, pretending to be a sweeper and out of touch with Plutonium. His appearance aroused no great concern. Most of the priests wore modern clothing acquired along the way.

Deep in the heart of a forest in what had been a desert in Clark's day, around a smoky fire, Jack learned that God himself had destroyed the Mystery, angry at the priesthood's lack of vigilance. Later, as the fire fell to ashes and the monks lay back to sleep, an old priest by name of Goosers Texas, who had eyed Jack with interest, looked about, beckoned with a grizzled head and a squinting eye. When Jack sat down beside him, the old man said:

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"You look like an intelligent man, Tankers Jack. You'll go far in the priesthood. You say that you were on a sweep when all this happened. And these simpletons told you the story we of the Hierarchy have put about. Well, you deserve better, Tankers Jack. The truth is, God did nothing to the Mystery. A man destroyed it."

The old eyes searched for a reaction, and Jack opened his eyes in astonishment.

"Yes," said the priest, nodding toward the fire. "Yes, by the Holy Interface, we know, we of the Hierarchy."

Jack signalled his respect and said that secret knowledge belonged by rights to those who carried the burdens of responsibility.

The old priest nodded and sighed. "Yes," he said, "the burdens are heavy." He leaned closer and whispered: "The abbot told me—"

"The *abbot?!*" Jack breathed.

"Yes, sir," said the priest. He nodded gravely. He picked up a stick, leaned forward with a groan, and threw it into the fading embers, evoking sparks. He sank back again.

"The abbot points to the Woman of the North." The monk nodded to himself. "She did it—her henchmen stole the needle."

Jack grew alert. A woman had been mentioned—a woman tied karmically to Plutonium.

He told the priest that, pardon his ignorance, but he had never heard about the Woman of the North. What was the story?

"Well," said the priest, "I reckon you must have been sweeping far to the east of here. And you mustn't have been around these parts for a good many years—am I right?"

Jack allowed that Goosers Texas was right on the button.

The dry stick burst into a flame. The old man leaned forward and held his hands toward the heat to warm them. When he resumed, his tone had changed. He would be telling a story.

"Well," he said, his old face red and gashed by moving shadows, "her name is Zeronica. An odd name, I'm sure you'll grant. The presidents of Phoenix all called themselves Henry until the male line died out. Henrys Henry, each and every one of them. She was the daughter and only child of One-eyed Henry, as the people called him, the last of the Henries. Nothing wrong with his eyes, you understand. But he squinted a lot, sort of like this."

The old man turned and squinted with one eye. His features grew lewd. The open eye glinted oddly, as if with a smile. Jack had the uncanny sensation that he was sitting beside Walk-on-air.

"He called her Henrys Oneish in the customary way," the old man resumed. "He knew she would never be any man's Twodie. She was a President's daughter, after all. But that wasn't good enough for the Woman of the North. After one-eyed Henry died, she changed her name in a ceremony in Phoenix Square, right in front of the Presidential Pod. She even sent out runners to advertise the fact. They explained what her name meant. She didn't want anyone to miss the meaning. At first the people smiled

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at this. They figured she would marry the man the Phoenix Congress selected as president, that being the natural expectation. But she had another notion.

"The people of Phoenix eat out of her hand, you understand. But there are those, even some in Phoenix, who blame her father for her ways. Henry never had a son. He spent his nights in a harem of those feathery creatures people call Dingbats around that part of the country. Zeronica was more or less an accident, I understand, or else his wife had taken a lover. However that may have been, once Zeronica was up and about, Henry took a shine to her and brought her up as if she'd been his son. He taught her reading and writing and got her ancient books to read. He even sent her on a tour of the world, and that's where it happened, years before her father died."

The old man stopped and refuelled the fire again. Its flames drew from the darkness the shape of pines bunched closely together.

"Somewhere far in the northeast, up where the ice starts," he went on, "a band of bandits captured Zeronica during that tour. Henry had sent her with an escort, of course, a hundred men, I think. But Zeronica had quarelled with the captain of her guard, and one morning, without his knowledge, she rode off early with just her tutor to keep her company. That's when she met Alans Shepherd, the man who helped her later.

"The story has it that this Shepherd—by reputation a violent man, famous for harrassing the caravan route that snakes along at ice-edge—well, he killed the tutor and dragged Zeronica off to his tent. She bounced limply on the rump of his horse, unconscious in her furs, knocked on the head with a club. Shepherd yelled and screamed with joy, savage that he is. But once he got her inside the tent and swabbed her back to waking, she got the upper hand in a hurry. The story has it that she stopped him with a look in her eye. That's the kind she is. And before you know it, Shepherd was yelling through a tent-flap. Slaves came running with food and drink. She sat on a hassock like a first lady. He behaved like she was an equal. And the two of them made a deal.

"What the deal was came out later. The story goes that she agreed to become his Oneish after it was over, after her power was secured. She promised him she'd made him president. She would be his only wife. And, sure enough, people say, Alans Shepherd went to her chamber in the presidential pod after Congress swore her in as president-person. And he said to her, 'Zeronica,' he said, 'we have an agreement. You promised to marry me after I put you in power. I have put you in power, so be as good as your word.'

"I don't know for a certainty that he used those words, Tankers Jack, or exactly what happened," the old man said after a pause. "There are many stories. Maybe he tried to embrace her too, as he had once tried to do in his tent—and I guess you can imagine him pressing her against a credenza or a table, trying to find her lips with his. But whichever way it was, whether she

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slapped him, as some say, or whether she slipped from his grasp, quick as a weasel, or whether they never came within a sem of each other, all stories agree that she said to him, pointing at him: '*You* put me in power, Shepherd? *You*?' And then she started laughing and laughed and laughed. Her head went way back. And then she doubled over and slapped her thighs. And Shepherd, who thought he was a very big man because people feared his men, why, he couldn't stand her laughter. He took his hat and walked out of there. He swore to his closest companions that he'd replace the bitch, chase her out of Phoenix and take over himself. But he never did. He is still there, working for her, and Phoenix has only one president-person, and that's Zeronica. People say Shepherd still loves her, still hopes, and can't do her harm.

"Well, soon after that, Zeronica started making changes, and—"

"How did she gain power?" Jack interrupted.

"What? Oh, that. Well, she brought Shepherd and his ruffians back with her from her world tour. Shepherd followed her like a little dog, and his pack right behind him. She called them her personal body guard. One-eyed Henry chuckled at it fondly. He let her do anything she pleased. Slowly Shepherd built up his forces. He hired the scum of Phoenix, people without cult or property. By the time Henry died, Shepherd's gang was larger than the Phoenix military. But people didn't know that until the scum came from the cracks in the clay. Members of Congress who opposed her election learned to fear Shepherd's raiders. One or two pods burned down mysteriously. A couple of members died in tavern brawls. The upshot was that they elected Zeronica president-person and no questions asked."

The old man leaned forward, groaned a little, and tossed more wood on the fire. He shivered a little. His years made him cold. He sank back at last, his eyes pensive and far away. He was finished for the moment.

"Well?" Jack prompted. He felt a great excitement in his bones.

"Well," said the old man with a sign, "she's a witch, I tell you. It's those books, I suspect, or the old ruins she saw on her travels—God knows I've seen my share of them; never could make much out of such rat havens; but her mind was charged up with reading. At any rate, she called in Congress soon after she took over and she proclaimed that here—I mean Phoenix now, you understand—that here in Phoenix they would establish the New Secular Order. That's what she called it. She told them how the old world would come back. God had decreed that it would happen. That came from a book too, I think. Her reasoning was that it would happen in Phoenix, and nowhere else, because there had been a prophecy about a bird, and the bird had been called Phoenix, and when it burned it rose up again from the ashes.

"On the feast of Superstar, which some cults celebrate in the month of December—two years ago, it was—Zeronica made a declaration freeing all the mutants in Phoenix and on the surrounding lands, say-

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ing that slavery was evil and didn't fit the New Secular Order. She said she saw no difference between mutants and men. See what I mean? Well, Congress voted its support for her and Shepherd put down the rebellion on the farms.

"Then, last year—the girl's quite handy with proclamations, Tankers Jack," the old man said, shaking his head, "she announced that women were equal to men—"

"She said *that!*" cried Tankers Jack.

"She did," nodded the monk.

"And she got away with it?"

"She did," said the monk again. "I don't rightly know why, either. But, as I said, she's a witch and people eat out of her hand. They believe her. I've heard a story or two to the effect that she has assembled all sorts of ancient mysteries and has a priesthood of her own, trying to make them work. She has no decency, you see, and scorns the customs. Among those things, or so I am told, she has a mystery that makes pictures on the wall. You can see people walking and hear them talk as if they were real. And with this magic she bamboozles the Congress to do things her way. The New Secular Order!" the old man spat. "God forbid such heresy. . . .

"And so, Tankers Jack," he concluded, "I think the abbot is right when he suspects her. It wouldn't surprise the Hierarchy to learn that Alans Shepherd led the thieves that killed our brothers. But don't say a word to these simple yokels," he said, gesturing all about. "They don't need to know what we know. But you'll go a long ways in the order, Tankers Jack. You need to hear the truth. But now wrap up and go to sleep. The cold is deepening."

The old man pulled a blanket about himself. He lay down, his back to the fire. His eyes closed and he seemed to go to sleep.

Jack sat erect for a long time. He stared into the smallish flame licking the last piece of wood. Ash lay on the log like reptile scale; the flame burned blue above the glow of embers.

He saw Walk-on-air's fine hand in all this—the meeting with Goosers Texas, the story of Zeronica. He recognized her touch across the ages and knew her though he'd never seen her current form. Fateful, all this. He had to hurry away into the growing night chill from this spot of fading warmth. His karmic journey was not quite over. She too, like he, attracted Plutnoium. And so did Alans Shepherd, the unknown third in this star-crossed party, whose pathetic quest for Zeronica's love seemed oddly reminiscent of something lost in Long Ago. A missile had found her. Jack had to find it. He owed as much to the twentieth century.

VIII

THE MISSILE GLOWED very high up, suspended nose down in the center of a wooden tower. The tower stood in Phoenix Square. The Square stood in the center of Phoenix. And Phoenix was the center of the world. Bright stones spelling an inscription said so.

Jack stood at the foot of the tower and peered up into the height.

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Darkness gathered as the sun set, but its filtered rays made the missile's hull glow red. It might have been a brass bell hung in a spire.

He wondered if the missile could pick up information through visual sensors implanted in its hull, and what the brain might think of Phoenix which, from his height, must be like an open book spread out for all to read.

Jack, for one, couldn't read this age. The memories of other lives interfered with his understanding. The new America constantly amazed him. The streets of Phoenix, for example, wound themselves around and around a center like lines on a conch shell, narrow and crowded. The simplicity of the constructions didn't explain the pattern. All the houses had a fundamental similarity, as if the primitive builders were informed by an invisible Spirit and labored like ants to construct Its hidden forms. All over America, in endless variations, he had observed the same phenomenon, the birth of a new form world, still tentative, groping, and unsure of itself, but recognizably the same.

He shook his head and felt regret that he hadn't studied history in any of his lives. With more information, he might understand why this America reminded him of hives. Oval shapes dominated the architecture. The buildings seemed to hang between upright columns, giant pods, modified only at the base where the requirements of physics overcame the cultural tendency. Inside the houses—they reached several storeys into the vertical—spiralling stairs led from level to level and corridors criss-crossed each level in that random pattern which everyone born into this century (without memories of other times) found perfectly sensible.

Community, communality, he thought, and it occurred to him that mankind might be planning a new adaptation of which the architecture was but an outward sign: a style and a feeling which might prevent, once Science awoke again, the creation of such monstrosities as that thing above, a brass bell that had no charity. As yet Jack saw no other sign of such a desirable adaptation, but the buildings, cities, and many forms of family organization predicted it as through a glass, darkly.

He waited a while longer and let the darkness settle in. When it came, it was nearly total. Without electricity, these new cities died with sunset. Glass was a rarity, the climate unreasonably cold, and people shut their windows tight with heavy wooden shutters insulated with bits of cloth at the cracks. Only a few people moved about in the light of torches.

At last, feeling that it was safe enough, Jack moved toward the tower—it was little more than a framework, really, and he slipped between its heavy supports seeking a ladder. He found it soon, a rough, makeshift affair built for workmen. He took a breath and began the long ascent.

Standing on a narrow platform and surprised somewhat that wind gusted up here while below it had been calm, Jack approached the missile. It hung in a network of leather straps. He rapped his knuckles against the metal of its hull. The act evoked a dull sound.

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Jack wondered if he would achieve what he planned. He hoped he would. Otherwise his life might be snuffed out, along with hers, and their reunion might have to wait another growing up.

"Hi there," Jack said.

"What? Who's there?"

The voice sounded sleepy, but Jack knew this to be illusion. Neuro-fibers linked the brain to a computer. The computer spliced together phrases from a tape-bank—pre-recorded phrases spoken by a pleasant baritone, an actor's rich warble.

"John Clark, at your service," Jack said. In the presence of this thing, his old American name came more naturally than 'Tankers Jack.' "I came to ask after your health. Are you operational? Or did you get damaged in the war? Your hull seems battered a good deal. Your rocket thrusters are gone. I'm surprised you're still alive."

The missile gleamed in silence, in a state of shock. Then the pleasant baritone spoke quickly. The voice had no emotional toning, but Jack sensed nevertheless a wild excitement beneath the words.

"Jesus Christ," the baritone said. The voice trembled from the center of the needle, a darkish reticulation in the metal. "Don't tell me you understand me? John Clark, did you say? What is this? What year is this? Oh, never mind. I am hallucinating. Stop your tricks, Frankie. Just stop it; don't torture me. Hello? Are you still there? Is anybody out there?"

"I'm here," Jack said. "John Clark, recently with the AEC."

"AEC? Oh, Jesus! Frankie, for God's sake, why don't you just let me sleep in peace. These dreams!"

"I take it that your visual sensors are out of order?"

"Visual sensors! *Visual sensors,* the guy says. I'll be damned. You've just got to believe! You better believe they're out of order. I'm as blind as a bat. Blind, impotent, immobile, and crazy. That's me. Frank J. Harmon, at your service. CR 17459110."

"What does 'CR' stand for?"

"You don't know? Hell's bells, the guy might be for real. Not an illusion. 'Conscious Rocket,' John Clark. That's your name, isn't it? Clark?"

"John Clark, Mr. Harmon."

"Mister. He knows how to say *mister.* Glory be!"

"I am a skilled nuclear engineer, Mr. Harmon, lately with the AEC, like I said. Now retired. I thought I might help you, if I *can* help you. The natives around here tell me that you're unhappy."

The missile was silent again. A faint new moon had risen over the horizon. It was just a blur of light in the perpetual murk of the atmosphere but bright enough to ease forth a shadowy outline of the city below.

The missile suddenly burst out: "Unhappy, did you say? I'll give you unhappy, Mr. Clark. How would you like to live the life I've lived. Quadruple amputee? Get it? If you're with the AEC, you'll remember that war. We called it the Palestine Insertion Operation. A great big dong slipped right into Israel's see you, auntie. You get the picture. It got me then. Observers, we were called. But I am boring

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you! Tell me you're still there, John Clark."

"I'm here. I read you loud and clear, Frankie."

"Say it again.

"Say what again?"

"Say 'Frankie' again."

"Sure, Frankie. Any time."

"Man, that feels good. I get a real high, hearing that word. Jesus Christ!"

"You were telling me your story, Frankie."

"Johnny, bless you, how I groove on you. My story? What a trip. Real fun, being a basket case. Hester, my wife. She met me at the airport when they brought us back, and she had a look in her eyes, let me tell you. You don't know that look, how could you? I don't know the look myself, any more. I've been in this darkness all this time. What do I know about seeing any more. I just see this darkness, and I hear all sorts of things. I am a real good listener now. Never was a listener before. But I listened real hard to Hester. Night and day. I heard her on the telephone whispering to the Veterans Administration by the hour. And her whispering to little tom—Tom's my son, you see—telling him Daddy's very, very sick. And then they had this hush-hush program to find astronauts. Physical impairments were said to be no impediment, in fact preferred. Am I losing you, Johnny? Are you still there? I don't know how to tell a story any more."

"I am with you, Frankie. They wanted you to be an astronaut."

"Yes, sir. Useful again. Learn new skills. Earn a lot of money for Hester. Little Tommy could wear a button in school: My Daddy is an Astronaut. Red white and blue. Say it again, Mr. Clark."

"Frankie," Jack said.

"Thanks. Thanks a lot. I needed that. So I signed an agreement. Hester said it was all right. I had trouble reading. Even then, something with my eyes. They promised to fix that, in astronaut school. I held the ballpoint between my teeth. They had a guy from NASA there. He was a notary. He signed a certificate to prove that my scrawl was really mine. It looked like some kid's doodle. Didn't look like Frank J. Harmon at all. Never would have made it as a painter. Making watercolors for Christmas cards. You know what that is? Christmas cards? Johnny!"

"I am present and accounted for, Frankie. Christmas cards were sent at Christmas to all those dear and near. Okay? We cared enough to send the very best."

"Bless you, Johnny. Hallmark Cards. Oh, bless you, bless you, bless you. Can you help me? Help me, Johnny. I want to see again."

"I'll do my best, Frank, old buddy. But tell me what happened? Did they kill you and put you in a machine?"

" 'Death takes place when cerebral functions cease,' " Frankie quoted. "They didn't kill me. No sirree. I signed that authorization, didn't I? It said that I agreed to accept prosthetic devices that would restore my useful functioning. Didn't I? You tell me. I did. It looked like a kid's doodle, but it was done by yours truly, a ballpoint between the teeth, eyes crossed, almost, to try to see the paper. The

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small print was blurred. Get the picture, Johnny? Johnny?"

"Frankie."

"You're for real, aren't you?"

"I'm for real," Jack said.

"Mind you, Johnny, I didn't kick. (Not that I had anything to kick with.) First off they put these probes into my brain, and next thing you know, I was having sex. Wild, unbelievable. Better than ever with Hester or anyone else. Wow! They just tickled something in the brain, and there I was, flipping out. Kama Sutra, baby. Real unbelievable, like. They did it when we were cooperative, and you've never seen a bunch of studs cooperate like we did. It went on and on, even after we were implanted in the ships. I remember standing there, on my launching platform, eyes out over the Pacific, this giant thing all around me, and my brain feeling the hydraulic fluids gush and swish about, and I'd be having these orgasms up there, one after the other, Jesus Christ, Johnny! Johnny?"

"Frankie, would it help if I put my hand on your hull? Can you feel it?"

"No. All gone. Sensory's gone, visual's gone, mobile is gone, sex is gone. There's nothing but these thoughts and dreams and hallucinations. Say, how long was I out there, in the swamp?"

"Were you in a swamp?"

"You didn't know that? In a swamp. The sunlight barely reached down. I almost died. Even now, it's weaker than it used to be. Or else my memory is failing. I got lost, coming back, after the great Telepathic Conference we held, we and the Chinese missiles, above the

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Pacific. We could talk to each other without the voice tapes. No language barrier, either. They sent me back, headed for Houston. Something went wrong on the way. My eyes, I think. Never any good to start with. Hell of a thing. Here I'd been an observer, you know, watching that famous insertion. And next thing you know, some little wire must have burned up. Look ma. No arms, no legs, no eyes. And no sex, either. They controlled that from someplace central. Dole you out an orgasm every now and then. Obedience earned it for you. Good boys get to do whoopee. But something got Central early in the war. Get the picture? Johnny?"

"Here I am," Jack said and pounded on the hull. "You feel that?"

"Faintly, old friend. I hear the vibrations. I can't feel anything on the outside. Feeling's all gone."

"What about inside," Jack asked. "Your explosive charge—is that in good shape? Could you . . . still explode?"

"Don't be shy," Frankie said. "I know I'm a bomb. We found that out after a while. Telepathy, you know. We could feel our buddies dying. Odd sensation, filled with sex desire. You believe in reincarnation?"

"Sometimes, Frankie."

"Well, I do," the missile said. "I've been trying to get myself killed. Now I'm not so sure. A guy has to have a friend. Are you there, friend?"

"I'm here, right next to you," Jack soothed. "I asked about your insides."

"You sure did, Johnny, and I don't mind telling you. I think it's still all there. I check every now and then. Guy in my condition, he's got to know about his death. You know what I mean? That's all I've got going for me. I need a good impact on the nose of this thing. Set off the electrical impulse to start the fusion, drive the mass together. Critical mass. Hey, man. The last big orgasm."

"Did you talk these people into dropping you?"

"Did I? I tried. But I'm blind as a bat. They thought I was God, and I sort of went along. Told them to drop me and I'd come out. Savage types, would you say? Like those Palestinians I helped insert. But don't tell the press. You're not press, are you?"

"No. I'm just a retired guy. AEC, like I said."

"Good. Don't tell them we helped with the fighting. Not supposed to do that. Observers just observe. Get it?"

"I get it."

"Oil shortage still critical? Is there still a shortage?"

"Not that I can tell," Jack said. He glanced about involuntarily. Phoenix lay there, a dark crowding of oddly arranged pods. The streets wound around and around in a spiralling coil toward the nub of the city, lines on a conch shell, and this square the center of the world.

"You don't really want to die," Jack said.

"I don't? Maybe I don't. But it sure is boring in here. You can't believe what it was like, in the swamp. It gurgled the whole time. I must have been down there more than a year."

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"Would you believe a century?"

"What?!"

"Two and a half centuries?"

"Jesus. But . . . but then how come you know the things you know? Is there still an AEC? All these savages?"

"Don't fret about that," Jack said. "Can you open your hull? I'd like to look inside you, look at your charge. Can you give me access?"

Frankie hesitated. The wind was gusting.

"You're my friend, aren't you?"

"I'm your friend, Frankie. Here's what I'll do for you. I'll fix your eyes again—if they can be fixed. And I'll keep you company. Who knows, I might even find a way to give you sex again. But you've got to help me. You're hanging in a tower in the middle of a city. If they drop you, you'll get what you want. You'll die and go to paradise. But so will all the people around here—and for miles around. You don't want that kind of orgasm, do you?"

"Wait a minute!" Frankie said. The baritone had no emotional toning, but Jack sensed challenge in the words.

"Just a little minute, friend. Do you think I care? You think I give a damn? Haven't I done my share? Who are these people, anyway? I can't see a soul. What gives you the right to tell me how to die. I get it. You're trying to trick me. AEC, did you say? Well, let me tell you something, buddy. You guys were always jealous of us NASA types. No soap, old friend. Are you there? Johnny?"

Jack stood on the platform and didn't say a word.

"Johnny? For crying out loud, say somthing."

Jack said nothing.

"Johnny, please. No offense. Look. I'm opening the panel for you. See, I'm your friend. I trust you. Say something."

"I'm watching, Frankie," Jack said. He observed a straight crack in the silvery hull. It grew larger as a piece of the metal slid smoothly away to the inside. He stepped closer and looked in. "It's too dark to see inside," he said.

"I'll make you a light." A glow illuminated masses of componentry.

"Explain what I am looking at," Jack said.

"The charge is that flat octagon on the right," Frankie explained. "Or maybe, from your perspective, it's on the left. I don't know my spatial arrangements. The gyro is shot. See it? Johnny?"

"I see it, Frank."

"All right, buddy. Now, on the left, or maybe it's on the right—"

"Frankie, that tiny little thing? That's the charge?"

"Charge? Did I say charge? I meant the trigger. It's a fusion trigger. It's small, all right. Progress, you know. Just a bunch of mirrors and a vacuum. Stop that. It feels like a tickle."

"It's welded in there," Jack said. "How can I get it out."

"It just looks like a weld, old friend. Electrostatic adhesion. I can snap it loose for you—if I want to."

"Snap it, then."

"I'll snap it when I know I can trust you. Can I trust you, Johnny? Johnny? *Johnny!*. . . . Sure, I can trust you, there, see? I snapped it

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loose for you. Now you've got it, Johnny. You've got my manhood. I gave you everything I've got. My death is all I've got to give. Get it? Johnny, I love you, see? I love you. Hey, Johnny!"

"I'm here, Frank. I'm looking at this thing. What would happen if they dropped you now? Any chance for a big bang?"

"No way," Frankie said. "Like I told you. I gave you my manhood. Without that trigger, no critical mass. Need that fusion to melt the walls to suck the hot stuff into the center by the inertial. Figured that out, in the swamp. All dispersed now, between my parts, the stuff. Iridium walls. Safe as anything. Johnny?"

"I'm here, Frankie. I'm with you. Now listen. It's night time right now, and I need light to work on you. You go to sleep now, and tomorrow we'll talk again. I'll work on your eyes, first thing. Okay?"

"Don't leave me," said the mellow baritone, without emotional toning. But underneath Jack sensed a growing anguish.

IX

ALANS SHEPHERD strode down the corridor in the wake of the soldier who had come to get him. Anger boiled inside his head and guts. The messenger had interrupted his dinner preparations. Shepherd seldom made such preparations, but this time was unique.

Zeronica had sent him an invitation to attend the celebration banquet. A written invitation. His secretary, a Dingbat named Birdie, had read it out to him in her ancient cackle. Then Birdie had smiled slyly.

But Shepherd had fewer hopes than the feathery fem. Zeronica couldn't be trusted. Nevertheless, the invitation kindled hopes he had seen turn to ash. But Godbod only knew! Perhaps she had changed her mind and would fulfill him, now, at last. The matter with the needle had worked out after all. And the other day, looking up at the tower his men had built in record time, Zeronica had praised his skill in words of startling kindness. Tomorrow the world would see 'epiphany.' Birdie had told him what the word meant: God's appearance among men. The voice inside the needle would show itself in fire and lightning, thunder and smoke. Phoenix would become a shrine, the magnet of a grand, yearly pilgrimage.

Now it was moments before the bell would call the banquet. The interruption came at a terrible time. A scribe, the soldier had said. What sort of scribe could convince the guard to violate orders. *No* business. Not tonight. Some scribe. Terribly persuasive fellow, Well, he would be persuading rats tonight. In the dungeon. Insolent creature.

Moments later Shepherd sat down behind a table and they showed the scribe in, closed the door. He was dark, slender, and had long, sensitive fingers. Moist eyes looked at Shepherd from beneath the shadow of a black hat's rim. A golden earring dangled from his ear and reflected the shine of torches stuck into wrought iron holders in the wall.

Shepherd felt a rippling shudder

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pass down his back, an unpleasant sensation of tingling cold. The eyes across the table infused him with fear; so did the hint of a smile around those sensuous lips. His own steady face stiffened. He laid his hands on the table and stared at the scribe.

"What can I do for you," he said, using words much milder that he had intended.

The scribe sat down without an invitation.

"I am told I must get your permission to see your mistress, the president-person."

"That may be," Shepherd responded. "*If* you get to see her. Which isn't sure at all."

"I expect to see her. Immediately," the scribe said, smiling.

"What makes you think that?" Shepherd challenged. So doing, he felt uncertainty in his stomach. The scribe sent out vibrations. They cramped Shepherd's innards.

"I have information of the greatest urgency."

"Then tell *me*."

"I'll tell the president-person and no one else."

"In that case you might die with your news," Shepherd said coolly. He hoped the scribe had heard the threat.

"I don't think so," the scribe said. "Does the name Theodore Aspic mean anything to you?"

Shepherd shook his head. He felt the chill again. It ran down his back. Someone had walked across his grave, or some such nonsense.

"Did you know that the ritual machinery installed in the upper portion of Plutonium has been destroyed?"

"What ritual machinery?" Shepherd asked. He wondered what in the world the man wanted and why he felt so nauseous. Could this scribe be a magician? "Try to make sense, man. I'm busy. I can't fool around with you all night." He cocked his head, listening for the bell.

"Then take me to your mistress," said the scribe.

"So far you haven't given me a good enough reason."

"Does the name John Clark ring a bell?"

Shepherd shuddered. The man across the table had an uncanny look. He seemed familiar in some way. Was he someone Shepherd had met in his bandit days? Was he someone Shepherd had *killed!* The thought gave him another cold shiver. He didn't believe in ghosts. No way.

"I have vital information about the brain-missile," the scribe said.

"The *what*?"

"The bomb."

"What bomb?"

"The bomb you've got hanging in the tower. The talking bomb."

"Godbod?"

"Godbod, if you like."

The scribe reached into a satchel he carried at his side. He took from it an odd-looking something. An Old Order mystery. He laid it on the table. It was flat and had eight points. Reddish eyes seemed to be arranged on its surface.

"What is that?"

"It's a fusion trigger. You should know. You were a physicist once."

Shepherd stared at the scribe. The man appeared to be sane, but his words were troubled and incomprehensible.

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"I took it out of . . . Godbod tonight. I went up there and had a chat with it."

"You're insane," Shepherd cried. "FRANKLIN!" he yelled. A soldier looked in through the door. "Take this character and lock him up."

"Just a minute," the scribe said calmly. He showed no fear or excitement. "Your mistress will want to know why Godbod gave me this precious part of himself. Don't you think? What if nothing happens tomorrow when your people cut the straps and the thing falls down. Wouldn't you want to know? How will you explain that?"

"Get out of here, Franklin," Shepherd shouted at the soldier. Darkness surrounded him. He didn't know what he was doing. The door closed.

"Look," he said, pointing a finger at the scribe. "If this is a trick, I'll personally see to it that. . . ." His finger wobbled threateningly.

"No trick," the scribe said.

Shepherd stared at him. In the silence between them, nausea groped toward his stomach.

"Five minutes," he said. "You'll have five minutes with her. No more. And you better make sense."

He rose. Hollowly, through the intricately arranged walls of the presidential pod, he heard the chime calling the banquet.

"Five minutes," he repeated, and he pointed to a sand-clock on the corner of the desk.

He watched while the scribe put away the mystery. Then he left the room. The scribe followed him. Shepherd looked over his shoulder. "And what do they call you?"

"Tankers Jack," the scribe said.

Shepherd turned the name this way and that. It had no echoes, meant nothing at all, had no effect. He had never heard of a Tankers Jack, nor of a Tanker. The man was not some enemy's son, no matter how familiar he looked. But he was persuasive, dammit. And oddly frightening. His eyes ruled Shepherd's, much as Zeronica's did. Shepherd, though aware of this, wouldn't let the knowledge surface.

The presidential pod was a multi-structure. They had to pass from the eastern to the central portion of it by way of a covered bridge. In its middle Tankers Jack suddenly stopped, his hand on Shepherd's sleeve. His right hand described the panorama of rooftops with a wave.

"Fancy meeting like this again," he said. "In such a setting."

"I've never laid eyes on you before," Shepherd said with fright. He jerked his arm out of the scribe's hand. Phoenix lay before them. The tower loomed immediately up ahead, a wooden structure so skillfully erected and in such record time. Shepherd glanced up and saw Godbod's dull shimmer up there, half hidden by sections of timber. The moon, having risen high, enhanced its silvery glow.

"Your memory fails you, Alans Shepherd," the scribe said. "But never mind that. I wonder if your mistress will remember me."

Shepherd shuddered. He walked on, trying to shake off the eerie feeling. Deep down he experienced

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a tiny despair, a dark kind of knowing. It came into his being through chinks in the armor of his moral darkness. He stood before some kind of test, but didn't know it. To him it was simply a wrench of nausea.

They entered the banqueting chamber some moments later. The guests had not yet settled down. Zeronica throned in a sitting-basket hung from the ceiling by a chain. Senators and congressmen stood about her drinking beer from mugs. Her posture was regal. Her hands rested on the basket's arms, her gaze was steady. One of her legs was pulled up on the silken cushion.

Shepherd approached over the burned tile floor. His spurs rang like bells. Suddenly the scribe broke from his side and, with quickened strides, went ahead. Shepherd saw him bow before Zeronica. He did so in a strange way. His hat swept the floor in an exaggerated gesture. One of his legs was pulled back, the other stuck forward.

"Zeronica," the scribe said. His voice was melodious and rang through the hall. "I have sought you for centuries, my lady. It is a pleasure to see you so well—and so beautiful."

Congressmen and senators, ladies-in-wait, and even the beeman servants preparing the tables to the right, the small one and the large one, looked up and stared with surprise at this common, shabby figure, dressed like a vagabond.

Shepherd made haste to reach Zeronica's side.

"Mistress," he began, "I apologize for this . . ."

She silenced him with a wave of her hand. Her eyes were fixed on the dark face of the scribe. Fear stabbed Shepherd as he watched her. Something in her features had softened, perhaps in response to the scribe's small smile.

"Step closer," she said to the man. "I take it you're not from these parts. Did I meet you on my tour?"

"You met me on your tour," the scribe affirmed. "Don't I look familiar?"

Zeronica hesitated, a finger in front of her lips. "Y-yes," she said. "Something about you does seem . . . But, frankly, I don't recall our meeting."

"That may be so," the scribe came back. He tossed his head and made the earring glimmer. Then he looked down. "I am an inconsequential scribe, my lady. If I were to suggest to you that we were close friends once, it would be presumption on my part, however true it may be." He looked up. "I sought you out, lady, drawn by my memories of you—and also because I heard of your interest in Old Order mysteries. Over the years, I have become a master—"

"Mistress," shepherd broke in harshly, "this scribe came to me and demanded—"

"Shush," Zeronica said, her eyes on the scribe. "A master of the mysteries? she asked.

"If I may be so bold," the scribe said.

"In that case," Zeronica said, "perhaps you would care to take dinner with me?"

"Your suggestion is my deepest wish," the scribe said, bowing.

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Darkness closed in over Shepherd as dinner advanced. Until this day he had hoped, however small the hope, that Zeronica would someday be his. She had shown little interest in him. But she had scorned other men as well—which had reassured him. But what he saw tonight made his heart heavy. Waves came together over his head.

Upon his entrance into the room, Shepherd had noticed the small table, some distance from the large one, with two couches positioned side-by-side along its low, triangular surface. Despite the scribe's disturbing presence, he had spied that table, off to the side, and a thrill had passed through his bowels, despite the nausea. He had divined, in a flash, that she had meant to dine with him. Alone. With him, with Alans Shepherd, the guest of honor at this banquet celebrating epiphany. He had brought the Godbod. He deserved her special favor.

But now, cruelly, she lay on one couch and *he* lay on the other. He, the scribe. The creature called Tankers Jack. As for Shepherd—whistling beemen had brought an extra couch for him. They had placed it at the big table. Where the senators and congressman reclined between chattering ladies-in-wait.

Zeronica behaved oddly, and the talk at Shepherd's table turned around that subject. The high-placed guests threw Shepherd furtive glances as they gossiped. They knew the couch had been meant for him. Now they saw Zeronica giggle in an uncontrolled way. Then again her eyes were fixed on the scribe's dark features as he spoke. Only his golden ring seemed to move. He mesmerized her. She forgot to eat. But then, thinking he had bound her long enough, the scribe made lively gestures and jokes. Then she laughed again and reached for morsels of food on her plate. The sequence repeated and went on and on.

As hours passed, the company grew restless. Dentons Howard fell asleep on his couch, a fat senator. A lady-in-wait shook him from time to time to stop his raspy snores. Others drank gloomily and wondered when she might announce the end. Her banquet speech had not been delivered. She seemed to have forgotten the occasion. Instead her shiny blondness moved closer and closer to that dark head adorned by moist eyes and sensuous lips. One or two torches went out and smoked black against the wall. Only the chief beeman stayed around. He sat on a chair inside the door that led to the kitchen. His bony legs were visible; the rest of him leaned back, out of sight. He probably dozed.

Shepherd couldn't stand another minute of it. He rose abruptly. He left without the customary farewells to the hostess. His spurs rang angrily on tile. He wheeled about at the door, but Zeronica hadn't even turned her head.

He meant to go back to his quarters. His few belongings would be quickly packed. He would call the men whom he controlled, his original band, and before dawn's rust rose above the horizon, he would leave Phoenix, shaking dust from his boots. But halfway down the corridor that led to the bridge that

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led to east pod where his own quarters lay, Shepherd stopped and turned around. Curiosity ate him like acid. His eyes hungered to see the end. A gorgeous fury assailed him. On the way back, without thinking, he took a curved sword from a wall rack and slipped it inside his tunic. Then, stealthily, he inserted himself into a children's corridor.

By the time he found a spot where the wall, broken by wooden trellis work, gave him a view of the banquet hall, most of the guests had taken leave. They had followed Shepherd's example. Only Dentons Howard snored loudly, without inhibitions, on the couch. The chief of the beemen cleared the table. Then he also took his leave.

Shepherd watched, his breath a hot reflection from the trellis. They rose at last and walked away, hand in hand. Shepherd followed them, using children's corridors. His boots, left behind, couldn't reveal his movements. His naked feet stirred the dust of these unused pathways.

He lay on his stomach one floor above, eyes before another trellis. He tried to pierce the darkness. But he could see nothing below. Only his ears told him that they made love beneath him on the presidential bed. He began to sob without sound.

Later he listened to silence, then to whisperings. The curved blade pressed against his body beneath the tunic, but he didn't have the heart to pull it out, to plunge into the dark room where they breathed, to avenge Zeronica's treachery once and for all. Something paralyzed his hands and will. A little gap in his moral darkness allowed light to shine through. The light came from her and also, oddly, from him. When, after a while, they began again and he heard her soft moaning like a fist in his gut, Shepherd rose and retraced his steps, his desolation hardening to ice. Yes, ice. Go home, bandit. Go home. His sobs subsided and his eyes dried out. He put on his boots again and went away across the bridge. His feet tinkled like bells.

He decided that he couldn't harm her. But neither would he let her keep the gift that he had brought her, the ultimate gift, the last thing that she had said she needed to put Phoenix in the center of the world.

Grim of face, he roused his men and whispered orders. They sat up in their beds and rubbed their eyes. Then, groggily, they got up and groped for clothing.

* * *

Jack woke suddenly. He had been dozing. Zeronica's arm lay across his chest, and her shallow breath moved against his shoulder. He felt anguish, although he didn't know its source. It seemed that a voice had exploded in his head. A baritone had called for Johnny. Dreaming of the missile? He listened but heard nothing out of the ordinary. She slept beside him. Somewhere a cricket chirped. Nevertheless, Jack thought he heard the echoes of dying sound.

He began to move but gave it up. Blissful peace bathed his senses. He was at home, at last. She was his now, as she had been meant to be.

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Their lives, separated by his karmic fall, had entwined again. He knew now how to win her favor, the Cosmic Flower's soft embrace. Kindness would do it. Love of man and beast. Love, even of brains encased in steel and wire.

He heard a noise and stiffened. There was no help for it. He had to rise.

He disentangled himself carefully, unwilling to wake her. The room was chilly and the tile floor downright cold. He was groping toward the wall, expecting a window in that direction, when he heard shouts and the drum of horses' hoofs on cobble-stone. He ran the rest of the way, found the window, and threw open the heavy shutters.

The window opened on Phoenix Square. Moonlight bathed the scene. He saw motion to his right. Horses disappeared into one of the coiling streets, two lines of horses stretching some kind of netting between them. Something gleamed like silver between the lines. Then they were gone.

Jack looked up into the tower, filled with sudden insight. Frank J. Harmon, brain-missile, Godbod, had disappeared.

Jack swallowed. He knew, suddenly, that he had lost a friend.

EPILOGUE

It never came to a military clash between Phoenix and Plutonium. A delegation of the Hierarchy went through the city sniffing for the needle while the monkish thousands sat in siege outside the city walls. Satisfied, at last, Plutonium believed a man called Tankers Jack who had done the negotiating. They went away to trail one Alans Shepherd, plutonium thief.

Many years later word filtered back of a great new cult that had been started high up north, where the ice begins. The place attracted many pilgrims who went there to consult the oracle. Godbod had appeared to men, the rumors said. You asked it a question and it sometimes answered and sometimes it said nothing. But you paid for your chance anyway and you had one turn of the sand-clock to make a go of it. When blind men came, the oracle always spoke, and many blind men settled in the region and sold their services. The guardians of Godbod grew powerful and rich. They built a great temple and called it Harmony. People said that it was gold and silver, inside and out, and that its bells were heard for many kemits, round about, echoing over the ice.

The president-person of Phoenix married the scribe called Tankers Jack. She made him chief of her special priesthood, and they worked behind a high fence with all manner of mysteries. In a ceremony in Phoenix Square, right in front of the presidential pod, Zeronica changed her name again. She named herself Monica. She sent out runners to advertise the fact. They explained the meaning of her name so even dullards would get the picture.

They lived happily ever after, she and he. And after . . . and after . . . and after . . . like figures between double mirrors, getting ever smaller in a stream of time. ★

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She had returned from the dead. . .but not to him.

LIKE COFFINS CUT from the whitest coral the hibernaculums lay frosted in the high-vaulted hangar; the air chill and faintly medicinal, the floor cold concrete, the walls of tough corrugated steel, and above the door a sign—*Sleep such as makes the darkness brief.* Marcus Valerius Martialis, calling back from ancient Rome, entombed now in ice in frigid times. Hello there, Marcus. Welcome to New York. Welcome to the Twentieth Century, for that matter. Take a good look; it won't be around much longer.

* * *

He remembers the soft, pliant touch of her lips, the hungry seeking that always seemed so quick and desperate. There was an urgency to their loving, tongues searching, his cheek stroking the smooth dark skin of her neck . . .

How quickly it was over, how soon the night passed by.

He remembers, too, the long, whispered confessions they would make to one another, their admissions of loneliness, of alienation from the quick sharp steely relations that had come with the century's last decade. Kindred spirits? Uh-uh, Michael, try again. Peter Ibbetson and all that. Um. Well. Kindred souls?

A soft rich laugh. Go to sleep, Sleepmaster.

You too, love.

You too.

* * *

Warmly clad in goggles and heat-parka, Michael Aaronson walked from coffin to coffin in the special area he had set aside for those who had been close to him, idly counting the many friends who lay so white and calm beneath the frosted glass. Too very damned many; it seemed as if all his world was coming here to die—to die and haunt Aaronson for a cold eternity.

It was not all the world, but very nearly so. Aaronson's was a small world of treasured friendships, and death sent its people not to heaven or hell but here, to him. The hope that they had shared in life now forged an even stronger bond in death. Were it not for Karin, Karin and her sly/shy smiles and dark/bright eyes, he would have abandoned this cold, thankless position long ago . . . were it not for Karin and the joy she had given him, he would not have had the courage to reach out and touch these coffins, as he did now.

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The warm fabric of his gloves melted the thin coating of ice above the faceplate. Aaronson looked down at the woman beneath. *Ah, Libby, poor Libby* . . . Elizabeth Heatherton rested cold and unmoving in the 'naculum, her every mid-thirties wrinkle flash-frozen into forever, all color gone from her sharp-boned face and once-dark hair. She had not changed a great deal since she, Marshall, and Aaronson had attended college together back in the Seventies; her death had apparently struck Aaronson harder than it had her own husband, for Marsh rarely came to the Necropolis, and even then it was largely to visit with Aaronson.

Of course, she would rise again, and soon; but it would not be Libby Heatherton who would find new life in the future. It would not be Libby at all.

And perhaps Marsh understood that better than anyone suspected, and had quickly learned to count her among the dead.

* * *

He remembers the day the strangers came, limping to earth in a crippled starship, telling of their homeworld. Distant, depleted, dying when they had left; by now, dead. Telling also of what they had become: as old and dying as their world, ravaged by years of wandering in search of a home and finding only balls of ice, methane, and hard jagged rock. Until Earth. And they told of their exhaustion, and their ship's exhaustion, and their need.

Give us your dead. We will make them live. For us, granted; they will not live themselves. But is this so very much to ask?

Aaronson thought so and was much surprised by the numbers of people who disagreed—people who saw this as a way to hope without hoping, to have faith and remain faithless. Within weeks, the necessary thousands had willed over their bodies to the aliens . . .and within months, the aliens began to take legal possession of them. Some were unusable: too old or too maimed to be made young and whole by the strangers' science. But more . . . many more . . .

He remembers seeing the bodies rise, color returning to pale cheeks, recalls too his skepticism draining away as the new humans would walk, talk, smile, laugh, wince in pain and puzzlement—Aaronson began to feel a certain pride as he helped them climb from their coffins.

* * *

The shrill cry of the phone pierced the ice-cavern. Aaronson sprinted to the far end of the Necropolis, slipped off his right-hand glove and grasped the bitingly cold receiver.

"Manhattan Cryonics. This a Mobile?"

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There was a rush of wind behind the voice. "Number three. We've got one on portable life-support here. Female, black, about thirty-six. Minimal decomposition, but—"

"Dead of—?"

"Three-car pile-up on West 45th. Damage to the brain—ah, limbic area. Cell and tissue damage not very extensive, but it doesn't have to be to kill. Should we bring her in?"

Aaronson considered it. The limbic area controlled most motivational/emotional responses—waking, sleeping, eating, mating.

It was not a very good bet on revival, but . . . "Is she on the Aliens' list?"

A rustle of papers. "No."

"What's the name?"

"Karin Avery."

Aaronson lost his breath.

"Aaronson?"

He tried to speak, but his lungs had seemed to freeze and he had to choke out the words: "Bring—bring her in," Oh god god god. "I'll have a 'naculum ready in . . . seven minutes . . ."

"You serious? Without an alien—"

"*Shut up and bring her in, goddammit!*" He slammed the receiver back into its cradle, stood there cold and hollow, welcoming the sharp sting of frostbite to his right hand, trying to focus on the pain, nothing else. He slipped his glove back on and walked quickly to an empty hibernaculum. He wept as he squatted at its foot, nursing the freezing-unit to life and all the while wondering why, why, why this, why now, why her . . .

He clapped the lid shut as a whine of hovercraft engines penetrated the walls of the Necropolis. He stood up, heard the muffled slam of doors on the Mobile, then went and opened the wide, swinging door. The two climates—the biting chill of the hangar and the warm summer afternoon—met like opposing wave-fronts and condensation began, beads of moisture forming on his skin and parka. He waved the two medical attendants in with their burden.

"Come on, it's starting to rain on me. Get her in, will you?"

One of them blinked as he entered. "Jesus, you could go snowblind in here."

"Take at least a day for that," Aaronson said sharply. "freezer's over there—fifth row, eighth unit. And for God's sake take it easy."

The medic grunted and nodded to the second man taking up the rear. They hefted the body up and worked their way down the fifth aisle, passing the empty coffin.

"No no, *eighth* unit. Can't you count?" Aaronson stopped in front of the correct one, opened the curved glass top. "Get her in. Gently. Head facing me, face up." Not without irritation, the two attendants lowered Karin's body into the hibernaculum.

Thank God the eyes are closed,

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Aaronson thought; I couldn't do it, I couldn't . . . Trying to keep his gaze on his hands alone, he pulled out the needles that protruded from the interior edges of the 'naculum and gently inserted them into the veins of her arms and legs. One of the medics leaned over, peering at the machinery: "DMSO?" he said impassively, eyeing the liquid which had begun to pulse through the tubing, into the tips of the needles, and into Karin's veins.

Aaronson nodded absently. The dimethylsulfoxide would keep her timeless and safe, until . . . until . . .

Until what?

The bluff medic went on, "Don't see why the hell you had us bring her in. Damage like that can't be cured by anything less than an alien transfer, and she isn't on the list. Not my copy, at least."

Aaronson glanced irritably at the man. "But she's on the Suspension list, isn't she? This place existed long before the aliens arrived, dammit. She's entitled to *some* hope."

The attendant smiled sardonically. "She'll make somebody a good ice statue, maybe—"

Aaronson flushed angrily. "Get out!" he snarled, hardly recognizing his own voice. "*Now!*"

The startled medics turned and fled. Aaronson looked down at Karin and tried to hold back his tears as the liquid nitrogen slowly enveloped her.

She was pale as bone, a snow-sculpture that threatened to melt at the first breath of life. Aaronson pulled the needles from her veins and applied an intracellular coagulant. The flesh healed as well as dead flesh can. He dropped the cover, sealed it, and allowed the coolant gas to fill the hibernaculum.

She lay white below him, her face colorless, her arms motionless by her sides.

Her face below him was dark and shining with sweat, her arms wrapped around him as they moved together . . .

Her voice was stilled.

Her voice was soft, whispering . . .

Her eyes were shut.

Her eyes were shut.

The medic had been right, damn him; her chances for resuscitation, for resurrection and for life, were almost non-existent without . . .

No.

An alien transfer would give her life but not the life she had lost. She would laugh and cry and love and even die, once more—or someone would. But not Karin; Karin was lost now, irretrievable, *gone*.

(Could he be sure of that? The newly Risen sometimes returned to old jobs, old talents, old lovers—were the old, discarded souls really dead, or did some remnant of the former persona remain, some shred of memory or ability bequeathed with mind and body—?)

Old jobs. Old talents.

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Old lovers.

It wouldn't be hard to forge the proper documents; not for a Sleepmaster. Not for him. He thought of the orbiting starship that even now arced a tired path above him, and he felt frightened, and alone. He looked at Karin's face, a deathmask of itself. He looked at her short brown hair, already paling to white. He looked at her closed eyes.

He walked slowly to his office and tore open his files.

* * *

He remembers the Sixties as a blur of constant activity, constant at least from the perspective of history; he marvels over the fact that he lived through events that have since transcended history and become mythica in themselves. Chicago. Vietnam. The Bay of Pigs. Dallas. Oswald. Ruby. King. Nixon. Bremers. The words have all the magic of a tribal chant; they've taken on a meaning apart from the persons and places they once represented. And oddly, bizarrely, the era had not seemed so very special at the time . . .

The Seventies, though, ah now that was his era, the decade of his own shattered generation, and he recalled it well. Too well. Karin put it best: "We went through birth-trauma at twenty and twenty-one; something was always happening, there was never any time to rest, and after the Sixties no one wanted to fight. We withdrew is what we did, curled up and tended to our hurts, trying to rest. And dreamt bad dreams, which is what we deserved for sleeping, I suppose."

The pace of change did not stop; nor did the withdrawal into self; and now, in the last years of the century, it is a rare thing to find someone like Karin, like Marshall, like Libby, like Aaronson himself—someone who looks to the future—with a cautious eye, perhaps, but to the future.

A rare thing, and precious.

Karin. Libby. Don't go. Don't leave—

Gone.

* * *

Three months passed, and the skepticism returned to Aaronson. He would watch corpses given new life and wonder if it was worth it. He wanted to stop them as they climbed stiffly from their coffins—wanted to ask them, Who are you, whose thoughts run through your mind, whose needs do you take to bed with you and whose memories do you cherish . . .?

He never did, of course; even as he was not there that day that Karin rose, restored to life and health by the strange science the aliens had long ago mastered. He thought that he could not stand to see a stranger shrug on her body as one might don

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an old coat; he thought that he would not be able to stand seeing her.

He was wrong. He could not stand *not* seeing her; not knowing for certain that the . . . being who inhabited Karin's body and who worked at Karin's old job at Columbia Holo, was . . . was someone else.

It was her music that focused his unease, the music that Karin had composed since early childhood, the music she had shared with him. A music that still lived—in the songs and themes that this new Karin continued to produce for the holo nets.

One way or another, he had to know.

He sat at a rear table in an uptown sidewalk cafe, absently watching the passers-by, all of them silent, self-contained, battered into respectable urban autism by the sound and violence of New York. He picked disconsolately at his salad, waiting for the shuffling approach of lunch hour, hoping that today he would have the courage to approach Karin when she left the Columbia offices across the street.

(Not "Karin," he reminded himself, trying to mentally pronounce the offworlder name she had adopted—*not*—)

Karin entered the cafe.

Aaronson felt his stomach clench. She was painfully identical to the woman he had known: the hair was different, piled high and natural instead of close and short, and her eyes were a bit heavier with cosmetics but—

It *was* Karin, damn it: the same high cheekbones, black glistening skin, sleepy, sensuous eyes . . . even the same walk; relaxed, confident, precise . . .

Aaronson pushed away his salad and stood. He made his way unthinkingly through the maze of tables, proceeding on instinct, uncertain what to say or do, but not hesitating.

"Karin?" he ventured. The woman looked up.

"I'm sorry, I'm not—"

He nodded. I know. But you—well, you used to be. Can I—?"

She smiled politely and nodded. The politeness of that smile pained him, cool distant . . . yet impersonally kind.

"I'm Michael Aaronson. I can't expect that to mean anything to you."

He studied her face: it was softly sympathetic, but betrayed no flicker of recognition. "I think I'm probably making a fool of myself, but—you're *not* Karin, are you?"

She shook her head. "No, I'm sorry. Was she your wife?"

The detachment seemed wrong, but inevitable. "No. Almost; fiancee. Three months ago . . .but you know that. I—I found out where you were working."

She grinned. "Is that why you've been coming here every day? I couldn't imagine anyone eating in

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this place without some ulterior motive, and yours didn't look to be financial. Now that is what I call devotion." The smile faded abruptly as her (*not* Karin's!) lips pursed in self-reproach. "I'm sorry, I shouldn't have said that. This must be pretty hellish for you.

Aaronson shrugged, striving for levity. "I've acclimated; I've lived too close to this for too long for it to become a horror show. I'm—" He hesitated. "I'm Sleepmaster over at Manhattan Cryonics."

She showed no trace of the cynical resentment which most people betrayed upon hearing of his occupation. In a way, that was very much like Karin.

In another, it was very much like the person she had become. What were you expecting, Aaronson? Alienation? From an alien?

"Then you must have seen her there," she said. "Seen me, when I left."

"No, I managed to avoid that. I thought that I didn't want, didn't want to see her—you. I—I guess I was wrong."

The waiter came with her lunch, but she did not touch it. She looked at Aaronson with a quiet intent. "What made you change your mind? Did you just want to convince yourself that I'm not here?"

He looked deep into those large black eyes, unsure of the mechanics of alien possession but knowing that everything she had said and done—the understanding, the humor: the concern—was too typically Karin for her not to *be*. "You're not, then?" he said softly. "There isn't a trace of her left within you?" The transmigration, it's too perfect, it always is—"

She sighed—not impatiently, but sadly. "We're chosen for compatability, as closely as can be managed with the limited numbers involved. Take the music, for example. An act of creation . . . art, you call it. I was an—an artist—back home. Working in a medium I can't describe to you—light, spectra—but the feel, the devotion is the same. And so I was chosen to take—" A bad word. "—to use your Karin's body. There's no remnant of her left, though if there were, how could I tell?"

She studied him carefully a moment. "What you're really interested in," she said quietly, "is whether there's some part of her left that can love you. Isn't it?"

Aaronson hesitated a moment, then nodded meekly. "Am I that transparent?"

She smiled, "No. But I know what you must be going through. I couldn't ever hold it against you that you came here trying to recapture your fiancee. Because I'm so much like your Karin, I might—just might—love you?" She shook her head, compassionate but firm "I'm sorry, no. You see, I left a fiance, too. Or the equivalent—a lover, someone I shared things with. And I have to wait for him. No matter

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how long it takes, even if he never comes, I have to wait. That overshadows any affinity I may feel for you—when two people share the end of their world, when they share a fruitless search for a new home, for decades, long decades—" Her wistful tone turned somber. "Can you understand that? I have to wait."

Aaronson nodded mutely.

He rose to go.

"Thanks. For understanding," he said. "Hell, for being Karin."

"For being me," she reminded him, not cruelly.

He smiled weakly. "For being you, then."

"Regrets, Michael."

Hearing his name spoken again by that voice, *her* voice, made him want to flee. "Mine, too." He turned before she could reply further and disappeared into the thronging crowd streaming over the sidewalk, feeling more at home among them than he cared to believe.

* * *

"Mike! For Christ's sake, come in." Marshall Heatherton slapped Aaronson on the back and ushered him into his apartment. "Been so long since you deigned to honor us with your presence, Sleepmaster. How are you feeling now that—well, how are you feeling?"

Aaronson entered, thinking of Marsh's words: *us?* "As well as can be expected, Marsh. It takes some getting used to."

"Don't I know it. Li—love," he called into the kitchen. "Someone I'd like you to meet."

From the kitchen of the spacious gold-and-blue-trim apartment came Libby Heatherton, her face warm and pink and not cold and white, her eyes wide and friendly instead of shut and blind, her flesh as she shook hands with Aaronson very much alive. "Michael—hello," she said, and her voice, of course, was Libby's. "You remember me better than I do you, I'm afraid. I believe you were there when I thawed out, weren't you?"

"Uh—yes, I was. Only briefly, though." A dark flash of necrophilia struck and was gone as Marsh introduced him to the woman. She did not go by the name of Libby, naturally, but Aaronson noticed that Marsh rarely used her offworld name himself—it was usually "lover" or "darling" or anything-but.

Aaronson ducked the entire question of nomenclature by using no name at all when addressing her. "I hadn't known you were here," he admitted "I'd come to keep Marsh company awhile, and—well, uh, if I'm intruding—"

"Not at all," she said warmly. "I want to meet as many of Marsh's friends as I can. You can stay for dinner? Marsh is preparing some exotic Terran food that I've yet to taste, and I'm trying to im-

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provise one of my homeworld recipes. It should be an interesting combination.'' She laughed. ''Or don't you want to risk it?''

''If I know Marsh, it's probably no more exotic than Mexican chili,'' Aaronson said, trying to smile. ''Thanks. I'd—I'd love to stay.'' Somehow, Aaronson felt lost; he had come here with the vague notion of wallowing in pools of mutual self-pity, and now suddenly was in another alien situation. Christ.

Over dinner, he had the chance to obliquely study his hostess. As with Karin, the resemblance was marked and inexplicable. Mannerisms, personality traits, everything along the edges of her personality was definitely Libby; and yet the core, the essence of her, was not.

He found himself asking questions of her that he had been afraid to put to Karin. ''What was your world like before you left?'' he asked quietly.

''My world?'' she said. ''This is my world, now. But of course you mean my races's homeworld. Very much like Earth. What would you like to know about it?''

''Well, mostly—'' The woman was so damned *open*. ''Mostly—how could you ever leave it? I should think that would be the most drastic move a race could take.''

She shook her head. ''No; not leaving it. That's the easy part—once you've raped a planet, you go and find a new one to violate. But we didn't find a new one—perhaps mercifully so.

''No, leaving your world isn't all that difficult. The hardest thing for any race to do is to deny itself—to leave behind not only its home but its heritage, to immerse itself in a culture that will soon engulf it, knowing that its descendants will be children of another world and another people . . .'' Her voice grew soft, and then, with an effort, she shook the mood away. ''Well. Anyway. Was there anything else—?''

Aaronson hesitated. ''Yes,'' he said, very quietly. ''If you don't mind my asking—I took to understand that, among your people, certain bonds develop . . .lovers' bonds, we'd call them, but that's no doubt inaccurate . . . strong, inviolate bonds between individuals, that could not be broken by . . . landfall . . .'' He broke off. A cataract of tension seemed to film over the woman's eyes. Her voice was still polite, but a bit cooler, and she did not smile.

''That's all over,'' she said impassively, squeezing Marsh's hand. ''That was another world and another way. I'm staying with Marsh, you see.''

No, he didn't see, but Aaronson was not about to say so.

Not to her, at any rate. After dinner he and Marsh retired to the game room, ostensibly for reminiscences, while ''Libby'' cleaned up

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the kitchen. (What the hell kind of domestication was that? Aaronson wondered. God knows the old Libby would not have been that servile . . . or was it just a kindness, a favor to allow Marsh and Michael some extra time for talk? Before Libby's death, their marriage had seemed limp and failing . . . now it seemed to have gained a new strength, as if her rebirth had been his as well.

"You're happy together, then?" Aaronson said to Marsh.

"Hell, yes. It's a new start, Mike, without the mistakes we made the first time around."

Aaronson stared at the thick gold carpeting at his feet. "And why is she staying?"

Marsh looked at him a long moment, then shrugged. "I don't know. But I'm not arguing the point. My God, did you see her in there? So like Libby—"

"So unlike Libby, too."

"The difference is negligible, Mike. A difference of knowledge, not personality."

"Personality or superficiality? Damn it, Marsh, for all this woman is *like* Libby, she is still *not*. She is still—alien. I couldn't see that in Karin, but here, with the proper detachment, I can."

"You're generalizing," Mike said sharply. "The individual case—"

"Crap," Aaronson said. "There *are* no individual cases. I've *seen*, Marsh. I've seen those poor, dying, alien bastards kneel beside the coffins and empty themselves until all that's left is a chalky husk—more of a shell than the ones in the 'naculums because there's nothing *inside*, not even dead thought.

"And then the waiting: three days; never fails. They always win—Libby, Karin . . . they're nothing more than—cosmetics . . ."

Marsh, sitting on the arm of a couch like an unhearing stone lion, shrugged impassively. "Then why is she staying, Mike?" he said softly.

Aaronson leaned back in his seat and shook his head. "Oh, hell, I don't know. Cosmeticized aliens don't stick by mates not their own. Logically, you should mean nothing to that woman—she doesn't know you, doesn't even know Earth. But . . . she *is* staying with you, *is* letting you love her."

He glanced quickly at Marsh. "Isn't she?"

"Yes. She is." He rubbed his hands together like a nervous mantis. "But—you have a point, Mike. If you think all this is new to me, you're as naive as you think I am. I don't know if there really is a piece of Libby left in her—I can't know, I suppose—but I'll tell you something, Mike: I don't care."

Aaronson was silent. Marsh continued:

"Shit, you can be objective *now*; but when the subject's back to Karin you won't be. Can't be. You know what it's like . . . how can

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she ever be really alien? Everything that made you fall in love with her in the first place is still there, waiting. This may sound goddamned foolish, Mike, but—I love her; love what she was, and what she is; anything beyond that doesn't concern me. Can you see that?"

Aaronson paused a moment, then nodded. "Yes; yes, I do. You're blinding yourself to the possibility that Libby may no longer exist anywhere in the universe, least of all in her old body. And—I can't say I blame you for it. But I can't live that way, Marsh, I just can't."

"You can't live with hope?" Marsh said. Softly: "Hey. . . . whatever happened to that poor, naive bastard of a Sleepmaster I used to know?"

Aaronson stood, rubbing at his eyes and thinking of Karin. "Sleepmaster's tired, Marsh. Sleepmaster's cold . . ."

Marsh walked him through the living room to the front door. "Guess this isn't what you were looking for tonight, Mike. I can't even wish we could cry in each other's gin."

Aaronson smiled wearily. "I wouldn't wish it, either. Give —Libby—my thanks. For the dinner."

"Sure." Aaronson opened the door, was halfway through when, behind him, Marsh called out: "And hey—good luck."

Luck.

Luck, like hope, was beginning to look a tarnished commodity. Like life itself.

He remembers walking the streets after seeing "Libby"; feeling his hold on the future slip away and shatter. Walking along 44th Street, gazing at its battery of bookshops and stim flicks he realizes for the first time in years just how much he hates the City, the steel face of indifference it turns to its people . . .

Entering one of the new sex palaces with the biofeedback hookups . . . rushing out again, sickened at the first touch of electronic stimulation—was this how the lonely spent their time these days?

Standing in the middle of Times Square as the eddies of flesh-for-sale swirled around him, remembering how different the City had seemed when he had not been alone, when he had stood with Karin . . .

He remembers, perhaps, too much.

* * *

Marsh Heatherton came in on a Mobile three weeks later.

He'd been poisoned, a toxin the police chemists were finding deliciously enigmatic, producing a heart seizure in a manner not unlike that of curare. *Probably* of terrestrial origin. It would have been practically indetectable had not Libby made such an utter botch of the homicide—the police were extraordinarily efficient at capturing murderers who left fingerprints smeared

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all over somewhat vital evidence. Chalk up another distinctly Terran characteristic.

The trial was short and swift; evidence was thick and damning. It did not take long for the jury to find her guilty on one count of manslaughter, a conviction that carried with it a minimum sentence of fifteen years in the state prison. This, however, seemed to be the only part of her plan that had gone awry. The last Aaronson heard of Marsh, he was standing steadfastly by his wife, promising to wait for her. Only he wasn't calling himself Marsh any more.

* * *

He remembers the end of the world.

He remembers manipulating records, juggling documents, placing his name alongside one he had gotten from Marshall.

He recalls liftoff, his hand in hers, watching the ravaged planet recede into the darkness.

He thinks often of she-who-is-now Karin.

* * *

Aaronson stood outside her apartment building, staring up at the dark rectangle crossed with strands of light. He was wearing his parka against the winter chill. There was no moon for him.

"Why are you doing this to yourself?"

He turned, startled at her voice. The woman who had been Karin stood in the chill night air, a heat-shawl draped across her bare, dark shoulders. "Do you enjoy suffering?" she asked, her eyes wide with concern.

"No," he said, shivering. "But it helps—helps to make me desperate enough . . ." He licked his lips. They were becoming chapped from the cold. "I'm—I'm back in the world I left when I found Karin; it's a hollow world and I hate it. Back then I felt I'd do anything to leave it." He turned. "We'll soon see."

He began walking away. Behind him, she called out, "Michael?"

But he would not answer to this.

* * *

He remembers feeling icy and warm at once as he swallowed the tranquilizers. He recalls the empty bottle shattering across the hard glossy tile.

He remembers the words he had spoken to her before she left for Earth to claim her flesh: "Wait for me?"

He remembers lying back on a bed too cold for too long, striving to anchor his first soul with his second, waiting for the arrival of the third, wondering if Karin had done much the same. Hoping.

Her arms wrapped around him as they moved together.

Go to sleep, Sleepmaster.

You too, love.

You too. ★

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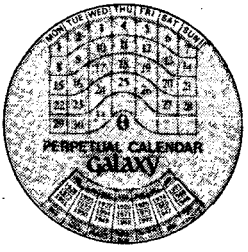

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SCIENCE FACT

JERRY POURNELLE, Ph.D.

A STEP FARTHER OUT

SURVIVAL WITH STYLE

SUDDENLY WE'RE ALL GOING TO DIE. Look around you: a spate of books, such as *The Doomsday Book, Eco-Doom,* and the like; and organizations such a "Friends of the Earth" and "Concerned Citizens" all say the same thing: Western civilization has been on an energy and resources spree, and it is time to call a halt.

The arguments are largely based on a book called *The Limits to Growth.* Written by a management expert for a group of industrialists calling themselves The Club of Rome, *Limits* may be the most influential book of this century. Its conclusions are based on a complex computer model of the world-system. The variables in the model are population, food production, industrialization, pollution, and consumption of non-renewable resources. The results of the computer study are grim and unambiguous: unless we adopt Zero-Growth and adopt it now, we are doomed.

The doom can take one of several forms, each less attractive than the others. In each case population rises, then falls drastically in a human die-off. "Quality of Life" falls hideously. Pollution rises exponentially.

Earth is a closed system, and we cannot continue to rape her as we have in the past; and if we do not learn restraint, we are finished. We have no alternative but Zero-Growth if we are to survive. One ZG advocate recently said, "We continue to hold out infinite human expectations in a finite world of finite resources. We continue to act as if what Daniel Bell calls 'the revolution of rising expectations' can be met when we all know they cannot."

Jay Forrester, whose MIT computer model is the main inspiration for Zero-Growth, goes much further. Birth control alone cannot do the job. It is clear from his model that only drastic reductions in health services, food supply, and industrialization can save the world-system from disaster.

Behind all those numbers there is a stark reality: millions in the developing countries shall remain in grinding poverty—forever.

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And the West, under Zero-Growth, has only two choices: impoverishment through really massive sharing with the developing counties—which must, however, cease to develop; or to retain wealth while most of the world remains at the end of the abyss. Neither alternative is attractive, but there's nothing else we can do. Failure to adopt Zero-Growth is no more than selfishness, robbing our children for our own pleasures.

So say the computers.

* * *

I can't accept that. I want not only to survive, but to do it with style. I want to keep the good things of our high-energy technological civilization: stereo, rapid travel, easy communications, varied diet, plastic models, aspirin, freedom from toothache, science-fiction magazines, Selectric typewriters, Texas Instruments pocket computers, fanzines, fresh vegetables in mid-winter, lightweight backpack and sleeping bag—the myriad products that make our lives so much more varied than our grandfathers'.

Moreover, I want to feel right about it; I do not call it survival with style if we must remain no more than an island of wealth in the midst of a vast sea of eternal poverty and misery. Style, to me, means that nearly everyone on Earth should have hope of access to some of the benefits of technology and industry.

That's a tall order. The economists say it can't be filled. My wishes are admirable but irrelevent. Their models prove that.

I might accept their verdict if they had modeled the right system; but in my judgment they did not. They assumed that we live on Earth. If that were true, that Earth were a closed system, the only place or planet available to us—then ZG might be the best of a number of unpleasant alternatives. But suppose it isn't. Suppose the economists have left something out of their models. . .

* * *

Arthur Clarke once said that when a greybearded scientist says something is possible, believe him; when he says that it's impossible, he's very likely wrong. That, I think, is as true in this case as anywhere else. When the economists, those propounders of "the dismal science," tell us that we are doomed, it's time to take a fresh look at the problem.

Forrester's models are basically ready to kill us through lack of food, lack of non-renewable resources; and pollution. If we can lick *those* problems we're all right. Oh, sure: there's obviously a finite limit to the number of people the Earth can support. I know how to manipulate exponential curves as well as anyone, and if we project population growth mindlessly ahead we soon come to the point at which

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the entire mass of the universe is converted into human flesh. So what? It isn't going to happen; population growth always declines with increasing wealth.

But there are powerful religions, whose adherents control large portions of the globe, that condemn birth control.

Well, yes. And I'm no theologian. But I cannot believe that any rational interpretation of scripture commands us to breed until we literally have no place to sit.

"So God created man in his own image, in the image of God created he him; male and female created he them. And God blessed them, and God said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it; and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth."

I will leave theology to the theologians; but the command was, "Multiply and replenish the earth, and subdue it;" and surely there must come a time when that has been *done*? When there can be no doubt that we have been sufficiently fruitful? And surely dominion over the wild things of the earth does not mean that we are to exterminate and replace them? Surely even those of the deepest faith may without blasphemy wonder if we are not rapidly approaching a time when we shall indeed have replenished and subdued the earth?

I cannot believe that we will continue to breed until we have destroyed our world: and frankly, I think of no more certain way to insure that the developing countries continue to increase in population than to condemn them to eternal poverty through Zero-Growth. So let's leave the bogey-man of unlimited population expansion. We have the technology to limit family size when, inevitably, there comes the time when everyone, no matter what his religious conviction, believes that the earth has been replenished and subdued.

* * *

Our next problem is food production. Surprisingly, it's nowhere near as critical as is generally supposed. Now whoa! Please don't write me about all the starving people in the world: I do know something about the situation. I've also interviewed senior officials of the UN's Food and Agriculturural Organization. There are very few countries that could not, over a ten-year average period, raise enough food to give their populations more than enough to eat.

The catch is the "over a ten-year period" part. The *average* crop production is sufficient, but drought, flood, and other natural disasters can produce famine through crop failures over a one, two, or three year period. You see, there's no technology for storing the

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surplus. The West has known for a long time about seven fat years followed by seven lean years, but it took us centuries to come up with reliable ways to meet the problems of famine.

Our solutions have been two-fold: storage of food, and weaving the entire West into a single area through efficient transportation. Drought-stricken farmers in Kansas can be fed wheat from Washington, beef from the Argentine, and lettuce from California.

But this takes industrial technology on a large scale. Even providing mylar linings for traditional dung-smeared grain storage pits in Africa is a high-technology enterprise.

Next, we waste hell out of land. Let's look at a few numbers. A hard-working person needs about 7000 "large" Calories a day, or 7×10^6 gram-calories. The sun delivers 1.97 gram-calories/per square centimeter/per minute onto the Earth. Say about 10% of that gets through the atmosphere, and that the sun shines about 5 hours (300 minutes) per day on the average. Further assume that our crops are about 1% efficient in converting sunlight to edible energy. Simple multiplication shows that a patch 35 meters on a side will feed a man—about a quarter of an acre.

Ok. I'm being unfair. But I'm not all that far off; you should see what my greenhouse, 2.5 meters on a side, can produce in hydroponics tanks; and there's no energy wasted in distribution of the food. I do use electricity to run the pumps, but I'm lazy; hand work would do it.

The joker, of course, is that I use chemical nutrients that take a lot of energy to manufacture. My greenhouse is made of aluminum tubing and mylar plastic with nylon reinforcements. All high-technology items, as are the fungicides I use, and even the water-testing kit that lets me balance pH in the nutrients.

Hmmm. We're back to industrialization again. Now it's true enough that if the average Indian farmer could manage the productivity level reached by the Japanese peasant of the 12th Century, India would have no food problems; but it's not likely he'll get there without industrial help; and meanwhile the Japanese have had to move far ahead of their 12th Century output levels.

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But it should be obvious that sufficient levels of industrialization and technology will overcome the food production problem for a long time to come. To get ridiculous about it, if 1% of New York City were covered with greenhouses, they would feed about 10% of the NY population; 1% greenhouses in Los Angeles would feed 1/3 of our LA population. Clearly food production *per se* isn't going to be a limit to growth for a good long time; food production will be limited by an enforced halt in industrialization and technology.

* * *

So now we come to the binding point. Our bottleneck is the penalties associated with industrialization. If we can industrialize without polluting ourselves to death, or without running out of nonrenewable resources, then we can all get rich; we can have survival with style.

But how can we do that?

In a series of articles in the "Other Magazine" (you know, the one with rivets), my friend G. Harry Stine described what he called The Third Industrial Revolution. Astute readers may even have noticed similarities between Harry's articles and my stories; as indeed they should, for Harry's articles were one of the most exciting events of my life.

Oh, sure; intellectually I knew that we could do all sorts of marvelous works in space; but Harry brought it home to me. His articles gave the *feel* of space industrial operations. In my judgement his phrase "Third Industrial Revolution" should become as standard a term as "industrial revolution" is now. *Should*; and I hope will; but it's not inevitable. The Zero-Growth movement may strangle the Third Industrial Revolution in its cradle.

Anyway, I'm pleased to say that Putnam's is bringing out *The Third Industrial Revolution,* by G. Harry Stine, about the time this article will be published; and I recommend it to every reader who's at all concerned about the future.

Harry argues that when it's steam-engine time, there will be steam engines; and when it's space-industry time there will be space industries. There I disagree; space operations are so capital-intensive—that is, require such enormous initial investments—that they're different from either steam engines or computers. By their nature, space industrial operations require *access* to space; and access is not available to the back-yard inventor, or even the fabulously rich eccentric. If I invent a better mousetrap, I can find an investor rich enough to build it; but for space industry there's no firm or consortium of firms that can come up with the initial investment. *If* private enterprise ever gets access to space, the game's over;

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we'll get the Third Industrial Revolution whether we want it or not; but if the anti-technology chaps have their way, the Shuttle will be turned into new busses for transporting children across town, school lunches, higher welfare payments, compulsory seat belts in automobiles, subsidies for tobacco growers, and public campaigns to "fight nuclear pollution."

Let's assume that somehow we get to space, though; how does that help us with industrialization? How will that enable us to survive with style?

From here on, while I will keep them simple and work it so that you don't have to follow them to understand my conclusions, I'm going to have to use some mathematics; in particular I must introduce a way to measure and speak precisely about energy.

The basic energy measurement is the erg. It's an incredibly tiny unit; about the amount of energy used up when a mosquito jumps off the bridge of your nose. In order to deal with meaningful quantities of energy, we have to use powers-of-ten notation. Example: $10^2 = 100$; $10^4 = 1000$; and 10^{28} is 1 followed by 28 zeros.

The table is included to give some feel for the numbers.

EVENT	ERGS	EVENT	ERGS
Mosquito taking flight	1	Annual output, total US installed electric power system, 1969	5.4×10^{25}
Man climbing one stair	10^9	World electric power produced 1969	1.6×10^{26}
Man doing one day's work	2.5×10^{14}	Thera explosion (largest single energy event in human history)	10^{26}
One ton of TNT exploding	4.2×10^{16}	Total present global energy use, *per annum*	10^{29}
US *per capita* energy use, 1957	2.4×10^{18}	Solar Flare	10^{31}
Conversion one gram hydrogen to helium	6.4×10^{18}	Annual solar output	2×10^{39}
Saturn 5 Rocket	10^{22}	Nova	10^{44}
One megaton	4.2×10^{22}	Quasar, lifetime output	10^{61}
Total annual energy use, Roman Empire	10^{24}	Big Bang	10^{80}
Krakatoa	10^{25}		

ENERGY; Little Bug to Big Bang—One erg is the energy required to accelerate one gram at one centimeter/second/second over a distance of one centimeter.

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We're concerned about non-renewable resources and pollution, right? Let's go to space and solve both problems.

Probably the worst offender in both categories is metal production; give us enough iron and steel, copper, aluminum, zinc and lead, and surely we'll have our problems licked. After all, it's mine tailings that produce some of the really horrible pollution; copper refineries that poison so many streams; and those belching steel mills that make Pittsburgh a sight to behold (if you can see it through the smoke); and it's processing all those metals that really burns up the energy.

Give us metals free and clear, and the rest is easy. Give us enough metals and we'll industrialize the world. Besides, if we can do *that* in space, we can probably do anything else that has to be done. Consequently, I'll use metal production as my illustrative example.

In 1967, the last year I have complete figures for, the United States produced 315 million tons of iron, steel, rolled iron, aluminum, copper, zinc, and lead. (I added up all the numbers in the almanac to get that figure.) It works out to 2.866×10^{14} grams of metal. Assume we must work with 3%-rich ore, and we have 9.6×10^{15} grams of ore to work with, or 10.5 billion tons.

It sure sounds like a lot. To get some feel for the magnitude of the problem, let's put it all together into one big pile. Assuming our ore weighs about 3.5 grams/cubic centimeter, we have 2.73×10^{15} cm^3, or a block 1.39×10^5 cm on a side. Whoa. That's a block less than 1.5 kilometers on a side; something more than a cubic kilometer, less than a cubic mile. Or, if you like it as a spherical rock, it's less than two kilometers in diameter.

There are something more the 300,000 rocks that size in the asteroids, and 3% ore isn't too bad a guess at their composition. Hmmm.

But we're dealing with the world, not the USA, so let's give the whole world the per capita metal production of the US; since we export a good bit of ours anyway, surely that's enough. So we take our 315 million tons and multiply by 2.2 billion, and divide by 200 million, to get *3.465 billion tons* of pure metal, 1.05×10^{17} grams of 3% ore. That's 3×10^{16} cm^3, or a rock 4 kilometers in diameter. There are well over 100,000 of *those* out in the Belt.

Well, we won't run out of metals. Only, of course, we have to process those metals.

For a moment forget it's out there in the Belt and imagine our rock is now in orbit around Earth. We want to get the metals out of it. Let's assume we do it by brute force. We're going to boil the whole rock.

It takes about 2000 calories per gram to boil iron. That's about the worst case for us, so we'll imagine

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our rock is entirely iron for the moment. It's going to take a lot of energy: 8.8×10^{27} ergs, to be exact. That's something like twenty thousand megatons. Where'll we get the energy?

Hmm. The sun delivers at Earth orbit 1.37 million ergs a second per square centimeter, and out in space we can catch that with mirrors. There are 31 million seconds in a year, or 4.32×10^{13} ergs/cm^2-year out there. We need 2×10^{14} cm^2 of mirror, or one big round one 80 kilometers radius. Too big; even in zero-g that would be unwieldly. But a hundred of them 8 km radius doesn't sound so bad; or even a thousand at 1.6 kilometers radius.

Of course my mirrors aren't going to be 100% efficient—but then I'm not going to boil the whole blooming rock either. Nor do I seriously propose that we bring in the entire world metal supply from space, or that all that metal is simply consumed with no recycling. I'm looking for ballpark figures.

Note, by the way, that there's been absolutely no pollution on Earth so far. All the waste is out there where it can't hurt us. But we've still got problems, of course. After all, my metals are *not* in Earth orbit; they're out there in the Belt and they've got to be moved here—and that's going to take *energy*.

So let's see what it does take. To get from Ceres to Earth you've got to have a change in velocity—that's delta-vee—of about 7 kilometers a second. By definition energy is mass given a velocity change, so we can quickly figure out how much energy we need by the forula $KE = \frac{1}{2} mv^2$, and come up with 2.45×10^{11} ergs for every gram moved into Earth orbit from Ceres. We're going to move our whole rock, all 10^{17} grams of it, so we'll need 2.6×10^{28} ergs just to move it; about 10% of the world's present annual energy budget; not excessive in return for our entire metal supply.

But 10^{28} ergs is a lot of energy, and we're far away from the sun; I can't use sunlight for *that*. (Maybe I can, but we'll rule it out.)

So I need 61,000 one-megaton hydrogen bombs, which is quite a few; best I find another way. Note that if I don't find another way I may yet use the bombs; we needn't worry about radiation and fallout and the like out in space. My bombs are nothing compared to what the solar wind is doing during a flare. But how else might I work the transportation problem?

I need an invention: hydrogen fusion, which gives me, if I've got an efficient reaction, 6.4×10^{18} ergs per gram of hydrogen "burned". I'm unlikely to have 100% efficiency, so you can multiply the number I come up with by whatever factor makes you happiest. If you think my system is 10% efficient, try that. I've already described back last July one kind of space drive that will work given fusion.

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So I apply my fusion-ion drive, and discover I need to fuse 4×10^9 grams of hydrogen, which sounds like a lot, but it's really only 4000 metric tons, not so very much after all; quite a small ship could carry it. It's the amount of hydrogen in something like a cubic kilometer of water once I've thrown away the oxygen (which surely isn't polluting!) and we've got a lot of cubic kilometers of water on Earth.

I'll also need to get my hydrogen out to Ceres from Earth, which requires 9×10^{21} ergs, less than a Saturn rocket can deliver, or the energy obtained in fusing another 1.5 kilograms of hydrogen. Clearly we're not going to run out of hydrogen for a long, long time. Even if we must go to deuterium—"heavy" hydrogen—we won't run short; and recall, there's likely to be some ice out there in space. We may not need to do all our hydrogen processing here on Earth.

So. For the price of one to a few thousand cubic kilometers of water each year we've brought home all the metals we need to give the entire population of Earth as much metal as the US produced in 1969. If we do nothing else in space—if we come up with no startlingly new processes as described by Harry Stine in his fascinating book—we'll have licked pollution and dwindling resources, thereby letting the developing countries industrialize, and thereby whipping the food production crisis for a while.

Sure: there's a limit to growth. But with all of space to play with, I'll be happy to leave the problem for my descendents of 10,000 years hence to worry about.

I can hear the critics sputtering now. "But-but-but—what does this madman thing he's *doing*? Flinging numbers like that around! It's absurd!"

Really? Remember, we fling quantities like that here on Earth right now; and I've after all assumed that we're going to supply the whole world with metals at the rate we produce them from all sources—including recycling—here at ground level US of A. What's so absurd about it? Oh, no, we won't be operating on this scale for a few years; but then we weren't producing all those tons of steel back in 1930 either. Even Forrester's worst crunch model doesn't finish us off before 2020—a year in which we might very well be able to move asteroids around, boil them up for processing, and bring the resulting metals down for use on Earth. There's exactly as much time between now and 1930 as now and 2020.

Yes, we live on a finite Earth; but there's a whole solar system out there, just waiting for us to use it. We've only to lift our heads out of the muck to find not only survival, but survival with style.

I think I'll continue this column next month. There's so much more we can do. . . ★

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Fred Saberhagen

BIRTHDAYS

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One

LOOKING BACK, Bart could never clearly remember any part of his life before the day when the Ship first woke him from a long, artificially induced sleep, and guided him to the nursery to see the babies. That day and the first few that followed were very confusing to live through.

The Ship's machines, working with paint and glass and light, had made the nursery spacious-looking and cheerful. Bart counted twenty-four cribs. To count babies would have been harder, because only those who happened to be napping were in their beds. The rest crawled or sat or toddled on the soft-tiled deck, sending up a racket and getting underfoot of their attending machines and images. The babies were all the same age, just about a year old the day Bart first saw them. They wore white diapers, and some had on green hospital gowns like Bart's only of course smaller.

Bart was not tall for almost fourteen but he could easily lift one bare leg after the other over the low barrier the machines had placed to keep the little kids from tottering or crawling out of the nursery into the corridor. The corridor led in one direction to Bart's small private room and in the other—so his memory, working in a new, selective way, informed him—to the rest of the habitable Ship.

The babies squalled, gurgled, blubbered, or took time out to stare in silence at the world. They made nothing much of Bart's coming in among them. The images that the machines kept projecting and moving around the infants were of solid-looking adult humans, speaking and smiling; they evidently took Bart to be just one more image. The babies reacted more strongly to the machines because of the physical contact they had with them.

"Pick one up, if you wish," the Ship said in his ear. It was able to project its conversation so there was no way of telling just what direction the words came from. The Ship's voice sounded human, but not quite male or female, not quite young or old.

Like a good obedient boy Bart bent to have a try at picking up a baby. The chubby belly felt cool against his hands above the papery diaper and the head of dark, scanty curls turned so that the liquid brown eyes could stare at him uncertainly.

"See how the machines hold them," counseled the Ship. "Their arms are of basically the same form as yours."

He shifted his grip.

"The prime directives under which I operate are very clear. One human parent, adoptive or real, is necessary to the successful maturation of children; images and machines are psychologically inadequate for optimum results. Therefore, after receiving some elementary preparation for the role, you will serve as adoptive parent for the first generation of colonists."

Colonists. The word evoked in Bart the abstract knowledge that the Ship had started from an orbit around Earth, and was outward bound to seed humanity somewhere among the stars. How long ago the voyage had begun, and whether he himself had witnessed that beginning, were questions that his mem-

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ory could not answer. Nor did he feel any urgency attached to them. Somewhere in Bart's lost past he had learned that the Ship was to be trusted utterly and now he could wait patiently for a better understanding of what it meant by its announcement that he was to be a parent. Meanwhile he watched the infants, played a little with them, and tried to comfort and distract those who cried. It seemed to be the thing to do.

The machines labored ceaselessly, patting, changing, feeding, washing, wiping up. Twice they dispensed cups of soup-like stuff for Bart to drink. There were no clocks to watch but he was certain that he had been in the nursery for hours. At last, one of the machines took him lightly by the arm and pointed back down the corridor whence he had come.

When he had closed himself into his little plastic-walled bedroom the Ship's voice said: "You will be given a substantial breakfast when you wake again. That will be one standard year from now."

Two

He awoke as on the first day, as if from a sound night's sleep, and at once sat up to look over the rim of his bed, which curved around him like a padded bathtub, warm and dry and clean. Just how he was being put to sleep or awakened he didn't know, but certainly there was more to it than he could see or feel; somehow his gown had been taken off him while he slept and he was naked.

There was a new gown laid out on the room's single small chair, or the same one, washed clean of baby shit and pablum, and he put it on after using the toilet and washing his hands and face. From a panel in the wall he got his promised breakfast, consisting of a warm, milky drink in a plastic cup, and a tray holding chunks of bread, the breadcrust hot and crunchy and with pieces of fruit and cheese inside.

One standard year, the Ship had said . . . but his hands looked no bigger, nor did the muscles in his thin arms. His face looked no different in the wall mirror, and the fine tawny hair on his head had maintained its crewcut length. There were still no more than a couple of dozen brown pubic hairs curling at the bottom of his belly and he was sure he was no taller.

When he got to the nursery, though, he could well believe a year had passed: it certainly had if these were the same kids. A few were in their beds as before, but now those lying stretched out almost filled the little cribs. The majority were running about, keeping their balance reasonably skillfully for the most part, and busy with a multitude of toys. They wore shirts now, and shorts or pants over their diapers.

This time the babies were aware that Bart was more than just another image, and some of them took fright at first and clung to the machines. But he kept walking around and talking to them, as the Ship instructed him to, and soon they started to warm up to him.

Again he spent the day in socializing, and this time shared the little kids' food when it was dispensed by the machines. Meaty-tasting, mildly chewy chunks of

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stuff, and harder, biscuit-like objects that came in both sweet and sour flavors, it tasted good enough to be adult fare. Last year—yesterday—the babies had been drinking from nippled bottles, but today they got water and colored drinks in little cups.

Though he hadn't questioned the Ship on it, Bart was still thinking over the announcement that he was to be a parent. He could imagine himself at the head of an enormous dining table, all these kids, grown a little older, sitting round it, but beyond that his imagination was soon lost. He told himself to be patient; the Ship would provide explanations and instructions as they became necessary.

The continual racket was wearying. By the time the babies were all bedded down for what must be their regular night's sleep, with the lights dimmed, he was ready to go to sleep himself. At a word from the Ship, he walked back yawning to his room.

Three

Again he seemed to be experiencing nothing more than an ordinary night of restful slumber, and again when he awoke he hadn't grown or gotten older. This time he found a pair of shorts and a pullover shirt laid out for him.

After dressing and breakfast he walked to the nursery. Before he got there he could hear a year's worth of change in the children's voices, forming clear words now as they called to one another.

When the new glass doors of the nursery opened to let Bart in, he saw that bigger beds had been installed, and the walls moved back to make more space for play. The kids looked different—and bigger again, of course. After an initial shyness, not so intense as yesterday's, they all came crowding around Bart so that he walked through a little sea of waist-high heads. Here and there a bulge of diaper still peeped out of someone's shorts.

"What's your name?" one tiny voice cried out, insistent above the babble of the others.

"Bartley. Everyone calls me Bart." Who had called him that? Family? Friends? There were still no specific memories available. "What's yours?"

"Armin." Or maybe Ermin was what the child answered. Bart wasn't sure if the speaker was a girl or a boy. The group seemed about evenly divided as to sex.

Again he ate and played with them through the day. This time all accepted his presence unquestioningly before an hour had passed—though he didn't get the feeling that any of them recalled his earlier visits. Today, he noticed, there were fewer projected images of adults about.

A little girl who said her name was Deirdre brought him a wheeled plastic toy whose axle had come loose from its containing grooves. He forced it back into place, so the wheels could turn again, and Deirdre carried it off, after a machine had made her stand still until she said "Thank you, Bart."

Counting as well as he could in the continuing melee, Bart decided that there were twelve girls and twelve boys in the group.

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After dinner, when the machines had begun to pack the kids off to their beds, the Ship said to Bart: "You may remain awake for a few more hours if you wish."

He felt tired out, but not ready to sleep. "Maybe I'll read a book."

"I will provide some in your room."

Stretched out on his bed, he stared at a book for awhile without reading, then put it down and asked the air: "How long have I been here, in the Ship?"

"I have edited your memories of your past life for good reason. Your past contains tragic and violent things. Nothing can be done about the past. We must work for the future and achieve a successful revised mission."

"Are there any other people on board besides me and the little kids?"

"None. Much depends on you."

He lay there looking at the cover of *The Young Detectives Visit Earth*. Although his bed was comfortable and he was tired he didn't think he was going to be able to sleep.

But he really had no choice.

Four

Again, either his shorts and shirt were washed for him as he slept or it was a clean new outfit that he found on the chair. Breakfast as before, and he was on his way. The books had been removed and there was nothing else to do.

Two boys and two girls, grown bigger since he saw them last, were playing just inside the children's compound; Bart decided it couldn't be thought of as a nursery any more. As he approached the four caught sight of him and jumped with excitement, calling out to others, their voices coming to Bart faintly through the heavy glass doors.

As he entered it, Bart saw that their compound had been enlarged again. There were no more adult images in sight. Children came, hesitantly at first, from everywhere, some pedaling vehicles, others emerging from toy houses of multicolored blocks.

"Hi, I'm Bart," he said to those who gathered close around. "Anybody remember me?"

"The Ship told us you were coming to see us today," a bold little girl spoke as she pushed forward. "Look, look, see the picture I drew?" It was a row of a dozen or so little circle-faces, each the same size, with lines for hair and nose and eyes, and one large face above. "That's you." In a corner the artist's name stood in big shaky letters: SHARON.

As the day went on Bart heard the names of all the other kids, though he remembered only a few. He spent his time in play with one group and another, and then read them all stories from a book about old Earth as they sat around him on the floor. When the Ship directed, he saw them off to bed.

"Am I being a good enough parent, Ship?"

"The revised mission plan is proceeding satisfactorily."

Five

All twenty-four of them were

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waiting for him excitedly just inside the heavy glass doors. This time they all remembered him.

"We're five now, Bart!"

"Ship says we can have a birthday party if we want—"

"—like Billy and Lynn—"

It took him a while to figure out that Billy and Lynn were characters in some children's story the Ship showed them from time to time. Lynn and Billy were twins, back on Earth somewhere, and in one episode they had evidently enjoyed an elaborate birthday celebration, complete with cake, candy, and ice cream.

"How old are you, Bart?"

"Will you have a birthday with us?"

"Sure. If the Ship will give us cake and things. Maybe we can have some real candles."

"Yayy!"

So they had the party, the Ship providing real candles and entrusting Bart with a lighter for them. The machines even brought forth small paper-wrapped toys as presents for all the five-year-olds.

"Din'choo get a present, Bart?"

"No, it's not my birthday."

"When is?"

"In about a couple of months." The precise date was something else still sitting undisturbed in his memory, with blank holes knocked all around it. "This was fun. Listen, maybe we can have another birthday party when I come back tomorrow. You'll all be six, if the Ship keeps me on the same schedule."

"Tomorrow?"

"Well—next year. See, you and I are running on different schedules; I'm only awake one day every year. I expect the Ship'll put us on the same time schedule soon."

"Next year?"

Bart sighed, seeing that for them the difference between tomorrow and next year was not too clear. Especially the way he was talking.

Six

This year the difference in time schedules was much easier for them to grasp. So were a lot of other things.

Again the compound in which the children lived had been transformed. Part of it had become what Bart recognized as a school, and everybody was busy at teaching-machine consoles when he arrived.

The Ship's voice then declared a holiday for them all.

"Let's have our birthday party!" a boy cried out.

And after Bart had talked with them all, and read them a new story as the Ship directed, and had been shown through the school by his small friends, machines wheeled out a big cake. This time there were balloons as well as little gifts of toys and candy.

"Isn't it your birthday too, Bart?"

"Well, no. Mine's coming in about a couple of months . . . in two months and two days."

"How old will you be?"

"Fourteen."

After the cake and ice cream was finished they had a good time playing games. The kids were awed by Bart's strength and speed and dexterity, and he taught them some of the skills he knew for games with balls and ropes and sticks. Now and then someone who got bumped hard

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in a game took time out to cry. Bart thought he could tell quicker and better than the machines just how serious the damage was.

Seven

Before the seventh-birthday party got started, Bart went through a period of rather intense questioning by a few of the kids; Fuad and Ranjan and Ora wanted to know what he was doing all the time they didn't see him, where and how he spent the year between birthdays.

"I'm sleeping. The Ship can fix it so a person just sleeps all the time."

"Huh," said Ranjan, doubtfully.

"Why does it want you to sleep all the time?" asked Ora. Today she had a loose front tooth she kept wiggling with her tongue.

"I don't know," Bart admitted, feeling foolish.

"Don't you get hungry?" Fuad wanted to know.

"No. I guess it's not like regular sleep." Some vague knowledge of the process was available in his impersonal memory. "It's something like being frozen, only you never feel cold."

This year the games were rougher. When two or three of the boys grabbed Bart by the legs at once, they could tip him over.

Back in his room alone after dinner, he asked: "Ship, am I really helping much, being a parent, if I just come out once a year? How long will I be on this schedule?"

"You will not be on this schedule for any substantial portion of your lifetime. A definite time limit cannot be set now, but all computation on the matter is proceeding properly."

He tried again a little later, before going to sleep, but got essentially the same answer.

Eight

When Bart walked into the schoolroom something like boy-girl war was going on, the place in disarray, the weaker or more timid children in tears, the more aggressive screaming insults at one another and hurling toys and writing materials back and forth as missiles, over bookshelves and teaching machines turned into parapets. Adult images had been brought out by the Ship and were calling sternly and uselessly for order, and outnumbered machines were shaking some of the worst offenders by the arm and lecturing.

"Ship, can I help?" Bart cried.

"Yes. Two boys have got to a lower deck and should be brought back up." Ship's voice was calm and methodical as always, though somewhat louder than usual to be heard plainly above the screaming. "My machines are busy, and it would be helpful if you went after the boys and got them to come up again. Go down the stairs at the end of the corridor to your right."

It was a passageway he hadn't been in before, evidently one recently opened up by the ongoing enlargement of the living quarters. He found the two truants, Tang and Mal, without much trouble; there wasn't much of the lower level open to their exploration, only a loop of corridor sealed off by heavy glass doors at all other points where other passages intersected. The stair

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also was sealed where it went on down to still lower regions of the Ship.

The boys were glad to see Bart and willing to go back with him; they had seen enough of the sights down here, interesting though they were. Through the various sets of glass doors you could see other corridors stretching away for hundreds of meters at least. Many other doors were visible, some of which stood open to reveal static glimpses of rooms furnished for human life, but unused and empty of movement. The lights were dim in that large world outside the glass, and there was not a footstep on the dustless, polished-looking floors.

"I wonder if anybody lives there," Mal had asked, nose against the glass.

"Nobody does," said Tang. "Let's go back up."

"Maybe we will someday," Mal said in a small thoughtful voice.

Nine

The war between the sexes was not raging today, but it still smoldered, as Bart could tell readily enough from the grimacing and hair-pulling and name-calling that flared sporadically during the day. The cake and ice cream lunch was a success, as usual, and the games were fun, though now he had to exert himself somewhat to outdo some of the other players.

A girl and a boy had a brief argument about what mathematical formula should be used to calculate the volume of the basketball they were playing with, and with a start Bart realized that now some of these kids knew things, maybe important things, that he had never learned. And he was supposed to be their parent! Or was it possible he had misunderstood what the Ship was saying?

These things still bothered him when the day was over and he had undressed and climbed back into his isolated bed. "Ship."

"Yes."

". . . nothing." He decided to let well enough alone. Ship rarely gave him a helpful answer anyway. And he wasn't really all that anxious to be a father, at least not until he was older.

Ten

Eating his usual breakfast, Bart felt for the first time a little anxious about meeting the people he was going to find waiting for him in the compound. If they were all another year older, they wouldn't be so much like small kids any more, but *people* with whom he would have to interact almost as an equal. He shook off his misgivings and walked out.

The kids weren't enormously bigger today, but it was certainly time to celebrate their collective tenth birthday, and they reminded Bart of this right after their first whoops of welcome. They had a big calendar drawn on the wall now, and had been crossing off days, and there was no doubt that another year had passed.

Today when several of the boys ganged up on Bart in a rough game they easily pushed him around. Not that there had been any plan on their part to gang up on him, or that they were not still impressed by his strength.

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And this year there were certain moments, talking to the girls, when, oddly, Bart felt almost bashful.

Eleven

Suddenly some of the boys, Baruch and Olen in particular, were almost as tall as Bart himself. And Deirdre and Sigrid were starting to round out into the shapes of women; only just starting, but you could tell the process had begun.

Right in the middle of the cake-eating, the birthday party turned solemn, and there was a long sober discussion of early memories and hopes for the future.

All of them except Bart shared as some of their major lifetime memories the things that he had seen during the last eleven days—the old nursery, the parental images and the guardian machines, the toys and teaching devices. Of course he had missed the greater part of their history, but he had a sampling of it.

They sat there soberly sipping their sweet party drinks and talking. When it came Bart's turn to recount his early memories, he explained that the Ship must have scrambled them for him in some way, erasing large sections. "I don't even know if I was raised out of the machines like you, or if my biological parents were on board, or if I was born on Earth."

No one could give him any help with those questions. The talk went on for a long, moody time before they got around to playing games.

Twelve

Bart found himself looking up at Baruch, and level-eyed at a number of the other kids. The Ship was allowing them more freedom now, and everyone except Trac, who had a stomach-ache, had come to meet Bart right outside his room, the doors of which could only be opened by the Ship. Even Tang was there, though hobbling on a broken leg he said he had got by falling two decks down a stairwell. Ship's medical machines had neatly fixed the bones and told him he was healing.

Today the kids' collective attitude was at first so grown-up and businesslike that Bart was almost intimidated. They explained to him that they had just formed themselves into a society, modeled on old societies of Earth that they had studied through the teaching machines. Baruch had been elected president, and others chosen to fill at least half a dozen additional offices.

Even the birthday party began in an atmosphere of formality, but things soon loosened up. Bart was still stronger than Baruch, and could outwrestle him with an effort. But stocky Kichiro was now slightly stronger than he.

Thirteen

Chao, this month's president, announced early in the morning that this year's party was going to be a thirteenth birthday celebration for Bart as well as all the others. All the others chorused agreement, and Bart went along without protest, though he knew full well he had passed his real thirteenth birthday many months ago. He had not the slightest idea whether there had been any party to mark the event, so he enjoyed this one as his due.

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All through the day the girls paid him a great deal of attention, to which he reacted confusedly, enjoying it all one moment and feeling tongue-tied and awkward the next. He could tell some of the boys were getting jealous.

Every night recently he had been saying goodnight with the feeling of saying farewell, knowing that never again would he meet the same people he was leaving. Tonight he tried to stay with them, but one of the machines came and took him gently by the arm and led him from the group toward his room. He looked round at the other children's faces, and saw sympathy but no help, and knew he had to go.

Fourteen

Every morning now he went to greet some strangers, boys and girls he had heard about indirectly but had never seen before. They resembled other kids he had met yesterday, and had their names, but that was all. Their bodies were melting and altering almost while Bart watched, flesh inflating and stretching over elongating bones; boys' faces sprouting elementary whiskers while their voices deepened, girls' breasts growing, girls' legs curving and rounding to spell out disturbing secret messages in visual code.

And today they could literally talk over his head. Bart was small for his age. That's what—who was it?—always used to say.

During the party, right in the middle of the ice cream and cake, a fistfight broke out between Fritz and Kichiro. They slugged away at each other so hard that Bart saw he wouldn't be able to stand up to either of them for ten seconds.

The machines just stood around like dummies and made no move to halt the fight. Fay, the current president, had to yell repeatedly to get other kids to step in and break it up.

As soon as things had settled down a little, some of the kids began drifting out of the room in pairs, a boy and a girl together kissing and maybe pawing at each other as they left. Bart felt strange and almost frightened. The kids that remained in the dining hall talked and giggled and talked, talked, talked. The conversation was about nothing important, but still it seemed important that it be going on.

Edris came to sit near Bart and talk talk talk with him. A red ribbon tied up her brown hair, but a few strands fell loose down as far as the halter that covered her breasts. Solon got jealous and came over and started an argument. Soon he and Bart were trying to think up insults to call each other.

Bart shoved Solon, who was not too big for him to think of fighting, and Solon punched Bart on the cheek, so his mouth started to bleed inside. Bart hit back, and then they grabbed each other and wrestled in deadly earnest to see who could get the other down. With furniture in the way they couldn't come to any clean conclusion. Bart saw that a couple of machines were hovering near, and Edris was watching with enjoyment. Pretty soon some of the big kids grabbed the combatants and broke up the fight.

The social atmosphere was a little

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strained for the rest of the day, and Bart went back to his room earlier than usual, before the machines came to urge him along.

He sat on his room's one chair, arms folded. "Ship, I'm not being a parent. What am I really supposed to be doing?"

"Further instructions will be given you as required."

"Are you still going to wake me up only once a year?"

"The mission is proceeding according to its revised schedule."

He got up and tried to walk out of the room again, but found the door immovable.

He wondered if something vital *could* be wrong with the Ship. Might not its planning computers have broken down like so many common machines and be making hideously wrong decisions? Though his bland, smoothed-out memory suggested this was impossible, Bart went worriedly to bed. Sleep was still mechanically fast in coming.

Fifteen

Solon had grown alarmingly large and it was with relief that Bart saw him smile in a friendly if distracted way. The inside of Bart's mouth was still sore from yesterday but Solon said hello as if he didn't recall their fight at all.

Bart's former opponent had other matters on his mind, and returned quickly to a conversation he was conducting in fierce whispers with Fritz and Himyar and one or two other boys. It was shortly concluded, and the bunch of them took off, running grimly and purposefully down a corridor. Bart looked around and realized there was no one left in the common room with him but half a dozen girls, most of whom looked worried.

Galina and Vivian came over to Bart and started trying to explain. It seemed that the boys were now divided into two gangs, of six members each, and between the gangs existed something like open war.

"They've been fighting this way off and on for months now," Galina told him. "Always getting black eyes and bloody noses. Today looks like it might be one of the worst. It started today over whether we should have another birthday party or not." Galina, who was rather plain, was solemn most of the time, usually giving the impression she favored sobriety and order. "And the trouble is that now half the girls have gotten involved too."

Helsa and Lotis also came over, and the girls debated whether there was anything they could do to stop impending hostilities. All around them the Ship was quiet, ominously so, Bart felt. He stood by, feeling dangerously out of it all. He didn't even know the layout of the passages the girls talked about as they tried to guess where their male friends might be planning fights or ambushes.

While the other girls kept on talking to one another, Lotis came to Bart and with a gesture got him to follow her off into the Ship.

"Where're we going?" he asked, supposing some plan for peacekeeping or hiding out was being put into effect.

"Something I want to show you." She was just barely taller than he, with straight black hair and Chinese eyes. Shortly they came out

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in a wide, open space, a meeting of corridors where, Bart saw, the kids had improvised a swimming pool. Decking had been taken up, and a room in the lower level flooded. Lotis pointed out how waterproof patching had been stuck in where necessary, and a water pipe tapped to fill the pool. The water looked deeper than a man's head.

Bart was impressed, but somehow disturbed, too, that they had done this much on their own. "Didn't the machines do anything to stop you?"

A flirt of her head dismissed the powers of the machines. "I'm going in. Do you know anything about swimming? People on Earth used to do it all the time. The records show them doing it in the oceans even."

Lotis pulled off her scanty clothing and slid naked down into the water. She turned over on her back and paddled, smiling knowingly up at Bart while he stared down in helpless fascination. Female nudity was not among the things on which his memory could give him reassurance. His mind lurched in turmoil this way and that.

Suddenly he heard running feet quite near at hand and turned to see a figure dash out of a side corridor. Fritz was bigger and stronger even than a year ago, but his eyes were wide and frightened; he scarcely looked at either Bart or Lotis, but came running around the pool as if pursued.

He was. Kichiro and Basil and Mal came pounding after him, carrying bludgeons made of the unscrewed legs of chairs, their faces transformed in the fury of the hunt. Bart started to run too; he realized almost at once this was a mistake but it was too late—someone, responding to his flight with instinctive pursuit, had grabbed him from behind and he was flattened on the deck beneath his captor.

Kichiro had tackled Bart, while Basil and Mal closed in on Fritz. It sounded like all of them were yelling.

Fritz broke away and fled for another corridor, but Basil was too fast and blocked his path. Fritz lunged at him in desperation and before Basil could swing his club he was slammed up against the bulkhead in a choking grip. The club dropped from Basil's hand, and Bart, pinned on the deck under Kichiro's kneeling weight, could see the whites of his eyes seeming to expand.

Mal stepped close to the struggling pair and earnestly swung his plastic chair leg. The impact made an ugly sound and Fritz let go of his enemy, staggered back and fell.

Kichiro had started to get up, and Bart squirmed out from beneath him, tore free of a grasping hand, and ran. His one thought was to reach the safety of his own room. He had to pass between the group of boys and the pool, where Lotis, open-mouthed, clung to the side and watched.

Mal, turning wild-eyed, saw Bart coming and raised his club for another swing—

None of them had seen the machine approach, but now it was on hand as if it had popped out of the many-paneled wall. It took the swinging club from Mal's hand as if it were a feather and in the same instant shoved him violently back, so

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that he stumbled over Fritz's unmoving legs and fell.

"You *hurt* me," Mal croaked stupidly from the floor. His hand was scraped raw, oozing blood, where it had collided with the gripper of the machine.

The Ship said loudly to them all: "I have authority to sacrifice individuals, if I judge it necessary for the good of the mission."

No one moved or spoke as the machine walked through their shocked silence to bend over Fritz. As it picked him up, Bart saw that his eyes were half open but unseeing, and his mouth was slack.

It walked off down a corridor, carrying Fritz in its arms. His limbs hung down, utterly limp. The other boys stirred and followed, their weapons left behind. Bart heard a slosh and trickle behind him: Lotis getting out of the pool. He did not turn to look. The machine went on for a few score meters, then stopped, facing a panel in the wall.

"Ship," Kichiro said, "that's a disposal chute." But Fritz was already gone.

Ignored by the others, Bart ran back to his room and sat there, shivering and staring at the wall. The Ship served him his dinner without comment. He ate a little, and then soon turned to his bed, where sleep and forgetfulness never failed to come.

Sixteen

All twenty-three of the kids were waiting for him in the corridor when he stuck his head out of his room to see what might be going on. But it was all right.

"No one's going to try to kill you *this* time," was one of the first things said, by a strong young man with thickening patches of dark beard on cheek and chin. With just a minor effort Bart could recognize the speaker as Kichiro, who, as Bart soon found out, was this year's president. They were having elections only once a year now, he was soon informed.

Fights were evidently much less frequent also, Bart discovered to his great relief. He overheard part of an argument as to who had tried to kill him last year; that was the closest thing to a fight that happened on this birthday.

He also soon found out that birthdays, like gang wars, were now considered kid stuff, and today there was no party. Instead there was a good, elaborate lunch, with ice cream produced unpretentiously for dessert.

Talk turned to Bart, and his purpose in the world. He repeated to the kids everything that the Ship had ever told him about that purpose, which wasn't much.

"I wonder," Basil said to him, "what the Ship'll do with you now? I mean we obviously don't need you any more as a father or model or whatever to help us grow."

"I dunno," said Bart, taking a little more ice cream. The kids' eyes were all sympathetic, but still their silent gaze made him uncomfortable. "Whenever I ask Ship about it, it just says the mission is proceeding as per revised schedule, or something like that."

Sigrid nodded knowingly. "Ship's that way. If it doesn't want to answer something for you, it just won't."

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Seventeen

This morning it was a relief to meet a group of stable, sane-looking people, not too much different from their namesakes he had said goodbye to the night before.

Bart soon noticed that Basil was missing from the group. "Oh, he's all right," said Ora reassuringly. "He'll be along for lunch. He goes studying the stars."

"The stars?"

"We've found a way to reach the outer hull. In one place there's a glass port where you can see the outside of the Ship, and the stars too, of course."

Bart could call up a plain picture of what stars were; sometime, somehow, he had seen them.

"What do you think about the stars, Bart?" Tang asked him patronizingly.

He didn't have a quick answer, and Armin said: "Look, we've been working on this problem of the Ship and where it's going for seventeen years now. And Bart's put in how much time? About seventeen days."

And there was laughter, not unkind.

Eighteen

When Bart mentioned that he thought it would be fun to learn to swim, they took him to the newly remodeled and enlarged pool. Everyone was matter-of-fact about undressing and after clothes had been off for a minute or two it all seemed practically normal to Bart.

Resting on the pool's edge after some strenuous splashing, they took up again last year's discussion about the Ship and its purposes. Bart got the idea that now they talked a lot on this subject. Today he remarked that maybe soon they would be having children, so eventually people would fill up the empty rooms still waiting on the other levels.

Fuad shook his head. "The Ship's told us we're all sterile—know what that means?"

"You can't make any babies."

"That's right. Girls and men both. We can do all the sex we want, but nothing can ever happen from it."

Later, alone, Bart asked the Ship: "Am I sterile too? I mean, am I going to be, when . . ."

"No."

That was a definite answer at last, but to his old questions he still got only the old answers.

Nineteen

Bart's chronic worry that his life was going fundamentally wrong was lightened when he met his shipmates today. They were now so obviously adults that he could produce an inner sigh of relief and decide to leave the worrying to them.

Most of the teaching machines had been removed. At the few remaining, people were abstractedly at work, printouts and papers stacked around them.

As soon as the word spread that Bart had joined them for the day, most of the adults abandoned other activities and came towering around him, smiling and calling greetings, squeezing his shoulders and ruffling his hair. A number of people wanted to show him things.

Basil took him to see the stars. They went drifting, swimming through a part of the Ship where

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gravity was turned off, and though there was air Basil made him wear a breathing device, just in case. Through the glass Bart looked along the curves of the hull, unreal in their great size and distances, and at the stars that looked even more unreal, like a vast bright scattering of powdered paint.

After lunch he asked to go swimming again. Lotis, in the pool with him and others, now had a peculiar slightly mottled look to her thighs that Bart eventually decided must be caused by fat under the skin. And on her left thigh was the thread-like red tracery of an enlarged vein.

After dinner Baruch and Tang took him aside. "Bart—do you really like this one-day-a-year life?"

"I dunno. It's all right, I guess. The Ship must have some reason. It's taking care of us all, right?" He might have said something else, but Ship heard everything.

The men exchanged glances over his head. With several of the girls they walked him back to his room, when the Ship called for him, and almost tucked him into bed.

Twenty

He learned soon after rejoining the others that Tang and Ora had been killed, some months ago, trying to work their way into a part of the Ship from which humans were ordinarily sealed out.

"Were they trying . . . I mean, did it have anything to do with me? With waking me up more often, or . . . "

"No." Fay shook her head definitely. "Oh no, Bart, don't worry about that."

The thought hadn't really worried him. Actually it had generated some hope.

"They were trying to get to the far end of the Ship," Ranjan explained, "You know, the aft, as the old records call it. Have you seen any of the old records? The part of the Ship where the drive controls and so many other things seem to be located."

They explained to Bart such elementary knowledge of the Ship as they had been able to piece together, and his understanding of it grew a little. He found out also that they meant to keep on trying to get through to the other parts of the Ship, and eventually to take over its control. That was a strange thought, and Bart wasn't at all sure how much he liked it.

Twenty-one

It had been many days since his shipmates paid him as little attention as they did today. He was greeted cheerfully enough, but no crowd gathered around. A couple of people went with him to swim, in a pool that had again been remodeled and made safer and more pleasant.

He learned that some of the people were working hard to raise plants from seeds the Ship had long ago provided for their school biology program. They showed him the new garden. It held nothing ready to eat yet, but maybe next time he came.

He saw Kichiro limping by and heard that his knee had been lamed in some contest with another man, but whether it was a fight or a game Bart did not learn.

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Twenty-two

There were no beds in the old common-room any more, and Bart found that most of the people had paired off two-by-two, sleeping in more or less stable partnerships.

More noticeably, most of the people he talked to today had runny noses. Sharon told him that an experiment in the new biology lab had gone wrong and some viruses had escaped. Nothing to worry about, they assured him. He wasn't worried, really, not about viruses anyway.

All in all, it was a casual, low-pressure sort of day.

Twenty-three

Lotis, working in the garden, wore shorts today, and he noticed that her legs and bottom were getting quite lumpy with fat. The red vein on her thigh had extended itself into a little tracery of defective blood vessels in the skin.

All the runny noses had dried up. Some medicine the people had made for themselves was ready for Bart in case he caught the infection too. He didn't.

"Maybe the Ship's still taking good care of you," Chao commented.

Twenty-four

No one came down the corridor toward his room to meet him, but as soon as Bart had entered the general living area they all jumped out of hiding with cries of "Surprise!" and "Happy birthday!" It wasn't his birthday yet, but he soon understood that a sort of general birthday had been declared in which he was being invited to share.

"It's been ten years since we've had one, Bart," said Himyar. "A party, I mean. So we just thought it was time."

"We could make you an honorary fifteen," Fay put in. "Or how about an honorary twenty-four?"

"Have a glass of wine, Bart," said someone else.

"Wine?"

"Told you our garden was going to be a success."

"—oh, give him only a small one! He's too young—"

"—one glass won't hurt 'im—"

He realized after a while that some of the people were passing around another kind of drug, something they sniffed up into their nostrils. But he stayed with his one glass of wine, which made him feel just dizzy and high enough to be wary of asking for any more.

The party went on practically all day, with games and jokes and songs. Bart no longer minded when people paired off and vanished for a while, their arms about each other. This behavior was grownups' doings now, not something in which he might possibly become involved. He went along with all the partying and had a good time. Still, now and then he caught himself wishing they would get down to business. Though he didn't know just what their business was.

Twenty-five

This year his wish seemed to have been granted, for he got the impression of a lot of serious business going on. People were punching at computers and crouched over

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teaching machines, and in some rooms devices Bart couldn't identify had been set up.

He noticed that Olen's hairline was receding sharply, and wondered if the man had some kind of scalp disease. But he didn't ask.

In a large room away from the usual living area, Bart found Himyar working to form a towering metal sculpture, using a torch that showered and streamed electric flames. With this home-made device Himyar brushed the glowing metal into the shapes he wanted. Parts of the sculpture reminded Bart of flowers in the garden, or, again, of the curves of splashed water that lived momentarily when someone dived into the pool.

They talked for a time, and Himyar showed Bart some paintings Vivian had done. Himyar and Vivian spent most of their time working here or scrounging materials from every part of the Ship that they could reach; they had become known as the Artists.

"And Armin's an artist too, I suppose," said Himyar. "He's made himself a camera and goes around using it. Well, the Ship made some of the component systems for him, and the film."

"I'd like to see that."

Twenty-six

Nobody was working quite so hard today. Bart found an elaborate game in progress, a contest involving both physical and mental effort, with complicated rules. It had to do with dividing up the regularly occupied territory of the Ship between two contending factions or teams

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who struggled to gain more territory from each other. People sometimes were allowed or compelled to switch sides in the game. The dividing line between the territories was marked with bright tapes stuck on the decks and bulkheads, and moved back and forth as people won or lost at events like Indian wrestling—men were matched against men, girls against girls for the physical struggles—or asking each other difficult questions.

"Bart, be referee. Wasn't his foot off the deck just then?"

"Yep."

Powerful Kichiro, still limping on his trick knee, smiled and moved the tape into his opponents' territory by a distance of two wall panels.

"Hey, Bart!" It was Armin, approaching with something in his hand. "You never had a chance to see this. Here's a picture I took of you at the last birthday party. We'll have to have another one of those sometime."

Bart looked. "You hadn't even started with the camera when we had the party. It must have been yesterday when you took this. I mean last year, for you guys."

"Hm. I guess you're right."

Twenty-seven

He found some of the marker tapes still stuck up in place, but the game wasn't being played today and everyone seemed to have forgotten it. He met Fuad and Trac and was a little surprised to see how fat they both looked, with rolls of flesh above their shorts.

He thought of going down the passageway that led to the stars again, but there was no breathing equipment in the locker where Basil had kept it earlier.

Baruch and Solon came along and asked what he was doing. They soon explained that the breathing equipment was being used in "engineering studies" to find out how to reach the more distant parts of the Ship.

Bart wanted to know more. They told him of the solid walls and sealed doors that cut off access to those regions, and how the Ship refused to discuss letting anyone go there. It had not tried to stop their engineering studies, though; whether it would interfere when they began to break through a wall remained to be seen.

Using explosives aboard a spaceship was intrinsically dangerous: something important and irreplaceable might be damaged, or a compartment's air might explode into vacuum.

"That's how Ora and Tang were killed. And then I was getting some acid ready to eat through a wall, and it disappeared. I suspect some machine found it and took it away." Baruch shrugged, fatalistic but still determined. But we'll see, we'll see." He did not sound or look at all discouraged.

Twenty-eight

This year Bart got more attention from his shipmates than had been usual his last few days. Edris and Helsa looked at his teeth and wondered out loud if the Ship shouldn't be straightening some of them for him.

"Oh, they're not *terribly* crooked. But it did as much for some of us when we were kids."

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After lunch there was a general discussion of his future, carried on at times as if he were not there. Ranjan said: "I still think the Ship plans to provide him with a bride one of these days, one of these years. Maybe it's already tried to hatch other people from the artificial wombs and something's gone wrong, so it's got poor Bart just marking time."

Another adult asked: "You still think there's a good supply of human genetic material on board?"

"Bound to be. Else the Ship wouldn't have sterilized us, right?"

There was general agreement on that point, but on little else. One body of opinion held that the Ship really wanted the people to take over, now that its own computers had grown crotchety and unreliable with breakdowns and damage. But some kind of glitch prevented it from simply saying what it wanted. Schizophrenic, it fended off their attempts to gain control with one hand, while feeding and caring for them with the other.

The discussion soon got over Bart's head, but he listened intently, trying to weigh everything they said. He listened for something that might give him confidence, but heard it not.

Twenty-nine

"I know you've seen our biology lab before," Galina told him. "But I think you ought to take a real interest. All our futures may lie in this room."

He ceased scratching his back against the doorframe. "How so?"

"Sit down, Bart." When they were seated, she looked at him with concern. "Bart, if the machines never provide you with any people you own age—with a fertile female specifically—then it's going to be up to us to find some way to eventually produce more people, so that the human race can go on. I'm not sure that there are any people left alive on Earth."

"I see." He nodded seriously.

Galina spoke slowly and kept studying him for his reactions. "We know that when the Ship was launched there was a large supply of human sperm and ova stored on board, all coded as to genetic type, so that people could be conceived and raised by machines when the end of the voyage drew near."

"Uh-huh."

She sighed. "I myself suspect that most and perhaps nearly all of this genetic material was lost in some kind of accident that evidently disrupted the voyage in other ways as well. The Ship speaks always of a revised schedule for the mission, a revised plan."

"I know."

"There's further evidence." She paused. "I said all the human seeds and eggs were coded as to type and potential? There's some indication in the available records that all of us now alive—except you, we don't know where you came from—were conceived from materials not considered of the highest quality. Not that we have any grave genetic defects, of course, no seriously defective material would have been placed aboard. But—not the best. This suggests to me that all the best material was somehow destroyed, and also that there may not be much material left."

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Bart nodded, not knowing what else to say or do.

"Except you, Bart, as I said. There may have been a human crew aboard before the accident—whatever the accident was. You may be its only survivor. But I suppose your origins make little difference. Here you are and here we are, and there's the future to be faced. A future to be created—perhaps for the whole human race—out of whatever we have on hand. Would you like to learn something about biology?"

"I guess I'd better," said Bart.

They had a pretty good first lesson, distinguishing plants and animals, marking the first great branches of the tree of life.

"What are those marks on your face?" Bart asked on impulse a few hours later, as they were leaving the lab to go to dinner. He felt he knew Galina pretty well now and wasn't shy about getting a little more personal.

"What marks?" She raised tentative fingers to her cheek.

"Those little lines in the skin, going out from the corners of your eyes."

Thirty

Today marked a standard month since the Ship had roused Bart from his first period of suspended animation. When he awoke, a machine equipped with measuring devices was waiting at his bedside. It quickly got busy to check his height and weight, looked into his eyes and mouth, listened at his chest.

"How much taller am I than a month ago, Ship?"

"Approximately seventy millimeters," said the expressionless voice.

"And how much heavier?"

"Approximately ninety-five grams."

"Is that good?"

It wouldn't say. But it did adjust his diet, adding a delicious, creamy drink to that very breakfast, served in his room.

When he joined the other people he found Olen half bald, and learned that Basil had gone back to communing with the stars.

Galina gave him another biology lesson, more technical and duller than the first.

Thirty-one

Today Bart heard that Dierdre was in her bed, too sick to get up.

"She always liked you, Bart," said Chao sadly. "Go in and talk to her a little."

He went into Deirdre's room, and found her looking much sicker than any human being he had ever seen before. She also seemed too dazed to talk very much.

"Galina's been giving her drugs," Chao explained when he came out. "Otherwise the pain gets too bad."

"Pain? From what?"

"They think it's cancer." Chao and others tried to explain.

Only later did they get around to telling him that Baruch had been killed in some kind of an explosion, trying to force a passage to the forbidden areas of the Ship.

"Remember this photograph, Bart?" said Armin, cheering him up. "I took it of you at our last birthday party. We're going to have another one soon."

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"You took it the year after the birthday party, Armin."

"Oh? Maybe you're right."

Galina was busy with her other work today and never got around to teaching him biology.

Thirty-two

Deirdre had died, which came as no surprise to Bart but still left him with a hollow feeling. Thinking over matters of life and death, he stood at the edge of the garden, a high-domed region full of bright lights, vastly enlarged from the first little plot of synthetic soil. People were jogging for exercise around the walk that circled the perimeter of the garden, while others were working casually inside.

It was strange to see gray in the hair of some of them, but Bart guessed that was just one more thing that happened naturally with age. His own hair, crewcut when his shipmates were babies, was starting to fall over his forehead now.

He went to look up Basil, and asked to go out and see the stars again. Basil was willing. When they got to the observation port, he pointed out to Bart the prow of the Ship, and the aft, or the stern as they sometimes called it, where the engines and their controls were supposed to be.

"And when some people finally get back there," Bart asked, "they'll really be able to take over the whole thing?"

Basil shrugged. He was looking mainly outward, at the stars.

Thirty-three

Trac was the first person to meet

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Bart as he came down the corridor from his room, and as soon as she smiled in greeting he noticed that several teeth were missing from her lower jaw.

"Had a jaw cyst, Bart. At least that's what Galina and Solon say. They took it out. Spoils my famous beauty, but they think eventually they'll be able to do something about giving me artificial teeth."

"Couldn't the Ship—?"

"It wouldn't help, whether it could or not. It's giving us less and less help these days. But never mind about that, come along, we've got something to show you."

He followed along. And then they were all jumping out at him, yelling surprise! Birthday party! The common dining room was decorated with streamers and balloons, and the table set for a feast.

"We were going to have one next year, Bart, you know, ten years from the last, but then we decided why not have it now?"

"You can be whatever age you like, Bart. Be an honorary thirty-three with us, if you like."

"That's a third of a century, Mal," a woman cried. "Who wants to be that old?"

They were all good to him, as they usually were these days, petting and hugging him and fussing around, making it his party although it was supposed to be their birthday and he never said what honorary age he wanted. Actually he didn't want any, his own real age was good enough.

Later he found unnoticed in a corner something that he supposed had been dragged out of storage accidentally with the decorations. It was a wheeled plastic toy that he remembered fixing for Deirdre a month ago.

Thirty-four

The marking tapes were up on the bulkheads again, and a few people were playing at the question-and-wrestle game. Meanwhile some had evidently been spending a lot of time working in the garden. It was now huge, and looked like the earthly gardens pictured in the Ship's records, which none of them had ever seen in actuality.

"And now, Bart, we're going to have some prayers. Come along."

"Some what?"

"You'll see. It's another old idea that Basil's been putting into practice lately."

They had wanted to hold the prayer meetings out by the observation port, Bart learned, but there wasn't room enough for everyone, and all had wanted to attend the first meetings at least, to see what they were going to be like. That was a month or two ago and by now attendance was dropping slightly.

Bart didn't understand the theory of prayer too well, but at the meeting Basil and the others who got up to talk seemed to be speaking not only to the Ship but to the world outside it, and to some force or power that had made them both.

Thirty-five

When Bart emerged from his room most of his shipmates were there in the hall-waiting for him, something that hadn't happened since they were sixteen, a day he

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could remember well. Today they were going to bring him to a meeting, they said, and at first Bart expected more prayers, but this meeting turned out to be more business-like than that.

It was governmental council, held all day or most of the day around the big table with lunch coming as an interruption. Lunch included fruits and vegetables brought fresh from the garden, as well as the usual rations issued by the Ship.

The proceedings got rather boring for Bart, though his friends made an effort to bring him into it all. They showed him their new system of recordkeeping, of recording all the discoveries of their research for easy access by Bart and future generations.

He looked the question at them.

"It's true, Bart," said Fay. A deep, gentle happiness glowed through her eyes at the thought. "The Ship has recently promised us, there *will* be future generations."

"Provided the mission is completed," someone put in.

"Yes. Well." That was enough for Fay, and for the people as a group.

Bart himself thought it sounded fine, but he would still like to know more. He asked the Ship for details later but got nowhere, as usual.

Thirty-six

There had been important changes made around him. He knew this the moment he started to come out of sleep. Opening his eyes a groggy second or two later, he realized that he was in a new bedroom, much like his old one but different in detail and bigger.

"Ship . . . Ship, where am I? What's happened?"

"You have been moved during your sleep into a new accommodation, Bart. There is no cause for alarm."

He got up and dressed and ate and eliminated as usual. The walls of this room were metal, and its door was thicker, as he saw when it opened for him to go out.

"Why did you move me, Ship?"

"Some of the people were attempting to reach you, to rouse you from sleep at the wrong time. They meant well but it was necessary to prevent their interference."

His door opened into a corridor he had never seen before, leading off in one direction only. It bent sharply several times and was interrupted by two sets of heavy doors that opened as Bart drew near and closed immediately after he had passed.

He found himself coming back into the peopled area of the Ship from a new direction, near the biology lab. The first folk to see him dropped what they were doing and ran to give him a glad welcome.

"I told you he'd be here on schedule!" cried Mal, pounding Bart joyfully on the back. No club in Mal's hand this time.

"Ship was just taking good care of him, that's all!" Sigrid pulled him in for a big hug against her heavy bosom.

Later he learned that an intensive effort had been made to "rescue" him from the machines, set him free from his long sleeps. The attempt had collapsed, foolishly, and no one

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wanted to talk about it. Then everyone had grown a little worried about Bart and all were glad to see him still coming back, if only for a day each year.

Gray was spreading in the hair of the happy crew around him, and several of the male heads were nearly bald. Many of the people looked a little fatter and squintier than when he had seen them last. They gave him a big lunch that was almost a birthday party.

Thirty-seven

Galina and Solon took him on a tour of their biology lab, which was much enlarged and changed since he had seen it last, with cages holding white rats and hamsters, raised from genetic material obtained from the Ship's stores.

"Do you think the long sleeps are harming me?" Bart asked when he had a chance.

"Harming you physically? No, I doubt it." Galina looked at him thoughtfully. "It takes an enormous amount of energy and a great deal of control equipment to keep a human being in such a sleep; even a Ship like this couldn't do it for very many people at a time. It's not just freezing in the ordinary sense, you know. Even the orbital electrons within your body's atoms are kept from moving . . . but don't worry about the physical danger of it, that's extremely small."

She was anxious to resume the biology lessons, and they went on a thorough tour of the lab.

"We haven't been able to get any human genetic material from the Ship to work with. Still, in theory it should be possible for us to produce a new human generation here, starting with just ordinary cells from our own bodies. Did I ever tell you anything about cloning cells?"

"No."

"I will. Anyway, it hasn't worked out yet. We're not sure, if the Ship is interfering in some subtle way, or if there are simply problems we're not aware of."

They showed Bart masses of tissue growing in glass jars. But they had never been able to get the tissue to differentiate properly into all the organs that had to grow in concert to make a person. It looked to Bart as if they hadn't yet even come close to achieving that.

Here and there old colored tapes were stuck to the walls and overhead, but the game they represented seemed to have been utterly abandoned.

The only competition Bart heard about today was in raising the best food plants and flowers.

Thirty-eight

It was depressing to see Helsa now dragging herself around like an invalid, her arms grown thin and her ankles puffy. Others told Bart that Galina suspected some slow, incurable disease. Then they turned the talk to brighter things.

"There's a lot of card playing going on now, Bart," Sharon informed him.

"Card playing?"

"Poker, whist, bridge," said Ranjan. "We'll show you. They're old games we dug out of the Ship's records. Then we've also tried two new ways to get through the barriers to reach the control regions of the Ship, but neither has worked."

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"We haven't really tried them yet," Fuad objected.

"Well, we've run them on the computer," Lotis put in.

"Bah. I tell you, the Ship is still using that computer against us—"

"No, *I* keep telling *you*," argued Ranjan, "we've got it blocked off now against any possibility of the Ship's gaining access—"

"So you think! I don't agree." The argument was heated, but still showed no sign of coming to blows.

Thirty-nine

Today there was a prayer meeting, more elaborate in ceremony but less intense in feeling that the last one Bart had attended. He noted that people's clothing, which they now made largely for themselves, was growing more elaborate too, and more voluminous; it covered more of their sagging bodies, and distracted attention from them.

Bart also noticed that a softer, more comfortable type of chair had been manufactured somehow and was now in general use. The legs didn't look as if they could be unscrewed.

Forty

It was birthday party time again. Only four candles adorned the big cake; each standing for ten years, as someone explained to Bart. The party was opened with a rather perfunctory prayer.

"Bet you don't remember when I took this picture of you, Bart."

"Yes I do."

Several speeches were made, tracing the recent history of progress in science—mainly astronomical observations and biological research—and in the arts, mainly sculpture, painting, and drawing. Not much had been done lately in an engineering way, a speaker said, which Bart supposed meant they weren't getting anywhere with plans to take over the Ship.

A new president, Olen, had just been elected for a two-year term, and he pledged in a vague way to get things moving.

All around the table the faces were puffy or lined, continuing to puddle or sag. There was more gray hair than any other color.

Forty-one

Bart found a number of people playing chess, a game they said—they would teach him before the day was over.

About dinner time Basil told him something else, more confidentially. "I'm not going to give you any details, kid, nothing the Ship doesn't already know. Information you don't have can't be pumped out of you. I'll just say that this time we really know what we're doing, and we're not likely to be stopped. We've been a long time getting ready."

Forty-two

He soon learned that Basil, Mal, and Olen had set out, shortly after Bart's last waking day, on a major effort to force their way into the Ship's control areas. They were not back yet, and by now it was doubtful, to say the least, that they ever would return.

Himyar, the sculptor, proudly showed Bart a tall pair of steel doors on which he was carving the history of their little society in a

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series of panels. He claimed that he had devised a method of grinding stainless steel that worked beautifully.

Helsa was now much better, Bart saw with some surprise. But Sigrid looked unhealthy and was complaining of vague pains. "We're going to try something new," Bart heard Galina tell her cheerfully. Evidently the Ship was again not helping, or could not.

The garden had once more been enlarged, the entire new area being used for additional food plants.

Forty-three

Basil was back, had been back for several months, but Bart saw that there was still something new and wild and strange in his eyes and he was still emaciated. The other men weren't coming back, Basil said, and that was about all he had to tell about his great adventure.

The way Basil looked made Bart timid about pressing him with any further questions. Later he heard more of Basil's story from someone else. The three men had tried going out into space, outside the Ship, to reach the aft where they intended to get back in. Something had gone wrong with their equipment; maybe the Ship had sabotaged it. They did get back into the Ship, luckily in a region where they could find air and water and stored food enough to keep them alive for a time, but the controls had been as much out of reach as ever. Eventually Basil had made his way back, somehow, through a maze of inner decks and passageways. He had never made it completely clear just how the other two had died, and Bart got the impression that it might be wise not to press too closely on that question.

Himyar had completed his doors and was working with Vivian on a giant mural of Earth, composed of scenes reconstructed imaginatively from old records.

Sigrid's condition was not much changed from last year.

Fay, having recently been named president in a special election, told Bart it had been decided that he should attend school every waking day. The people were getting ready a course of study for him. "The machines insisted on our attending school, I mean in a formal way, and I don't know why they don't with you, but never mind." She brushed back her graying hair and looked at him as if at a challenge. "It's time and past time that you formed good habits to carry you through the rest of your life."

Forty-four

Bart heard right away that Sigrid had died, only a few days ago.

Maybe this latest death was still on everyone's mind, and that was why his first day of school didn't go too well. Lotis was teaching, and sort of skipped from subject to subject, and technique to technique. She knew it wasn't going well, and once she sighed: "Someone else will take a turn at teaching next year, I mean tomorrow. Are you able to learn anything from me, Bart?"

"Oh yes."

His day was almost over before he heard something exciting: it was no longer quite certain that Olen and Mal were dead. At least some garbled message had come in, along

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disused intercom channels that were thought to connect with control territory. Some almost-indecipherable words about surviving. Maybe it was only garbage belched out by the vast intraship communications delay lines or memory drums, maybe not produced by any of this generations's people at all. But maybe . . .

Forty-five

Himyar had put his clever hands to work, toiling in his improved shop, to outfit several people with eyeglasses. Studies on artificial teeth were now well under way, with Solon doing most of the research. The Ship refused to do anything along prosthetic lines for anyone, though it still treated routine minor injuries.

Bart heard Edris and Trac and Kichiro praying, but no longer to the Ship. He saw Basil, who now stared at walls instead of stars, and still said very little.

School was better today. Fuad as teacher talked with him easily and amused him with stories of old Earth.

Forty-six

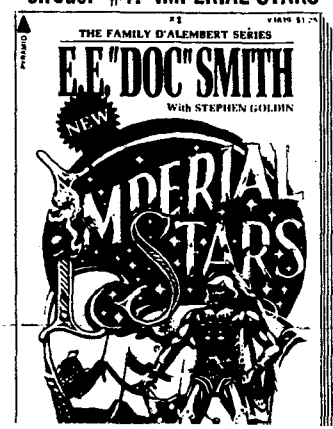
School again, his teacher Chao, who was grimly determined that he should learn to appreciate the beauties of geometry.

He heard that the garden was just getting over an epidemic of plant disease, caused by no one knew what.

Ranjan had just been elected president, for an indeterminate term, and had pledged to get things moving.

The work on artificial teeth was progressing again after several setbacks. Solon and others looked into Bart's mouth again to judge whether he needed braces, but to his relief decided to let well enough, or almost well enough, alone.

Conceived by E. E. "Doc" Smith before his death and completed by Stephen Goldin, THE FAMILY D'ALEMBERT SERIES follows a team of secret agents who double as an intergalactic circus! #1: IMPERIAL STARS V3839 $1.25



PYRAMID, 9 Garden St., Moonachie, N.J. 07074
A PYRAMID PAPERBACK

Forty-seven

Bart got to see Vivian's and Himyar's finished mural, and part of a championship chess game between Armin and Basil.

He tasted a new hybrid fruit from the restored garden.

He heard vagué mention of a Golden Birthday celebration that might last for a year and should begin fairly soon.

He saw some artificial teeth in operation.

He heard with blunted shock that Fay, who had been working on and

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off in the biology lab, had killed herself with quick painless poison. If anyone knew the reasons, they never made them plain to Bart.

In school Himyar taught him, spiritedly but unintelligibly, about the various traditions of Earthly art.

Forty-eight

The gardeners and biologists had reported success in rejuvenating plants, and there was hope of applying their discoveries to people. Some were saying excitedly that now they understood why the Ship in its wisdom had refused them any help along this line, while letting them work freely at it for themselves. It was beyond the very limited creative capabilities of computers; only humans could do it.

Not everyone agreed.

Bart's school went on with a whole group of teachers. They were trying music appreciation today, and no one on the Ship seemed to have a real bent in this direction.

Forty-nine

Bart noticed today that some of the people who had seemed happily and permanently paired off as sex-and-life partners were now paired off in different pairings, and evidently just as happy.

Today in school there was some confusion about just what Bart had been taught in previous sessions, and what he might now be fairly tested on. He did well on the tests when they were finally given, and the arguing teachers were all relieved.

Fifty

Again the whole group—the fifteen still alive—was on hand to greet Bart when he came through the last heavy door that set aside his private territory. They greeted him with cheers and songs, told him today was a holiday from school, and pulled him away for what they promised would be the biggest and best birthday party yet.

Sharon had just been elected president, and at the party table made a brief speech about how, with the help of all of them, she meant to get things moving again. As she said, she certainly wasn't going to be able to do it all by herself.

There were several games of volleyball. Playing with these old people who had the names of kids he had once briefly met, Bart found himself for a little while one of the gang. He lost himself in the game, jumped nimbly among the jiggling paunches and creaking joints, got knocked down when someone's hundred-kilo mass accidentally crashed into him.

But it was only for a little while that he belonged.

Fifty-one

He came into their living area with the feeling that they would have forgotten about keeping him in school, but no, the lessons were on as promised. Today, with Helsa teaching, Bart got a basic course in the Ship, what little the old records actually said about it and its mission, and something of what the people had been able to find out for themselves. After lunch, somewhat to Bart's surprise, Basil came in and took over for a while, describing how the hull looked from outside, and what some of the remoter

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portions of the Ship were like. He spoke impersonally, and rarely as if he himself had been there.

Fifty-two

The whole company was in a state of extreme excitement. About a month ago the world of the Ship had been rocked by an explosion, thought to have taken place a kilometer or two away along the hull, probably toward the aft. Whether a hurtling meteoric body had struck the hull, or there was some internal cause, was unknown.

The rumor flew by that Mal and Olen were perhaps still alive, and somehow responsible for the blast.

There was a sudden renewal of religious fervor. School was conducted in an atmosphere of tension.

Fifty-three

There had been no more explosions, nor any further hints that the lost men had survived. The crisis atmosphere was gone, and talk was again centered on the hoped-for rejuvenation treatments.

Bart saw a proud display of implanted artificial teeth. The method didn't work well in all cases yet but Solon was optimistic about improvements.

School went on. Today a team of instructors tried to teach him a little about human language and its near-infinite variations, some of which they spoke, or at least could read.

Fifty-four

Timber harvested from the enormous garden was being used to build a sort of pavilion, a roofless, high-walled structure which Bart was told would be used as a kind of social center. He thought they built it just to be building something.

Himyar was seeking treatment for arthritis, which had stiffened his fingers and interefered considerably with his work.

Fifty-five

Fuad lay on a bed inside the finished pavilion, recuperating from what he said had been a heart attack. Galina said the ECG showed that the worst was over. Bart sat and talked for a while with Fuad, who was fatter even than last year, and didn't look good.

People were swinging woven racquets, worn with use, in a game they called squash, played where the volleyball net had been three days ago.

Fifty-six

"What I preach to you, Bart," said Basil, taking a turn at being schoolmaster, "what we have evolved here in our little world, is a complete synthesis of all mankind's old creeds and philosophies. I am really certain of this."

"How can you have a complete watchamacallit if they were always contradicting each other, like you say?"

Basil had a long answer, but Bart found it not very satisfying.

A large part of the garden was now taken up by plants grown solely for use in the rejuvenation experiments.

Bart heard at dinner that Chao was now suffering repeated bouts of mental illness, and Galina had to keep her tranquilized and sometimes confined to her own room.

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Fifty-seven

Politics had heated up suddenly. Edris, who had been acting president, had been removed from office and, as some kind of compromise Trac was in. Bart couldn't figure out what the dispute was about, except some of the people felt themselves insulted by others.

At lunch Trac made a little speech about how she meant to get things moving again, both on exploration of the Ship and the rejuvenation work, which evidently had been allowed to lapse. She said also that expanded medical facilities were needed, and the hospital should be enlarged.

Bart remembered the hospital as the pavilion or social center, but there were two chronic invalids, Fuad and Chao, living in it now.

Fifty-eight

Kichiro and Himyar were pointed out to Bart as rejuvenation patients, perhaps already on their way to growing younger, though Galina and Solon didn't want to make any definite claims just yet.

"It's helped me a great deal, too," Trac said. Bart thought to himself how much her face had wrinkled and bagged in the last few days.

Himyar had started working in a new electronic medium, less demanding on the knuckles.

Basil was living apart now, giving much time to fasting and prayer.

Most of the women had taken to dyeing their hair, yellow and red being favorite colors.

Fifty-nine

Great interest in chess had revived, and a huge birthday party was being planned for next year.

Hair colors were still used, but had been toned down.

School went on, Bart arguing with his teachers that they should show him more about the structure of the Ship than about things of old Earth that didn't seem to him to have any bearing on his present situation. Galina still pushed biology, but Bart could see that you'd have to study that for years to really get anywhere. He didn't know how much time he had to study anything.

A couple of small riding carts had been built, powered by electric motors, and Bart had some fun riding them about. His elders got angry and yelled at him when he drove too wildly.

The most popular physical game consisted of sliding plastic discs over a pattern of numbered squares on the floor.

Sixty

When he woke up in his room a machine was standing beside him, waiting to give him his monthly physical. His gains in weight and height were both greater than at any time during the previous month. He counted a few more pubic hairs. This morning the creamy drink was dropped from his solitary breakfast.

The birthday party had more and fancier decorations than before, but little else was different, except that most of the people were content to just sit around and eat and drink and talk. Fuad didn't eat or drink

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much—he'd lost a lot of weight. But Chao, as the others said, was having a good day, and joined in merrily.

All in all, the old people had a good time. They fussed over Bart quite a bit, but he felt pretty much out of it. Not sad, really, but detached. School had been recessed for the day, though he would have liked to learn more about the Ship.

Sixty-one

Ranjan had suffered a stroke, and was lying paralyzed in the hospital, unable to move anything on his right side. Everyone seemed angry at the Ship, for what they described as cutting back more on its medical programs just as their needs were rising. Part of the space it had formerly used to give them such niggardly medical treatments as it provided had now been walled off. Something else was going on in there, they said, and nodded angrily, though they didn't know what was going on.

They questioned Bart, something like envy now mixed on their faces with the tenderness they usually accorded him these days. But he had not a scrap of information to provide.

At the moment the office of president was empty, and the question of reorganizing the government was being somewhat crankily debated.

Sixty-two

Vivian, who had been getting fat, was wasting and suffering internal pains. Ranjan was still unable to help himself at all. Bart was told these ills and a catalogue of lesser ones as if he should be just bursting with eagerness to hear them.

He was more interested in ping-pong, which was now a favorite game.

The burning social question was whether there should be an attempt at tinkering with the basic food machines to try to get a more easily chewable output from them.

Kichiro, Solon, and Armin, the only really healthy men, were undertaking an ambitious program to get themselves in shape. Edris, Galina, Sharon, Helsa, and Lotis were laughing a lot at the men and pondering a reducing program for themselves. Trac was thin already, maybe because she had trouble eating.

Sixty-three

He learned that Vivian was dead, to nobody's surprise.

His school today was conducted by Lotis; who about seven weeks ago had started to seduce him in the swimming pool. Meeting the eyes of the old gray-haired woman now, Bart thought she didn't remember that at all, which was only right; that hadn't been her in the pool at all, only someone with whom she shared a name. Today she taught him gardening.

The garden was being expanded again. A lot of the rejuvenation plants were still there, taking up space, and not so much living room was needed for people any more, Bart supposed. There were fourteen of them alive now instead of twenty-four, and the survivors didn't move around as much as they used to.

"Remember when I took this picture of you, Bart?"

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"Yes I do, but you don't." And he went rudely on his way, leaving Armin standing still behind him. It wasn't really Armin that bothered Bart, it was the whole situation. The future wasn't coming for these old people, but it was sure enough coming for him.

Sixty-four

Fuad had just died, of another heart attack, and Bart was solemnly conducted to see the still body being stored in a refrigeration room before they said words over it and gave it back to the Ship through a disposal chute.

"Death is a part of life, Bart," Basil explained. They hadn't given him that reasonable an explanation a couple of months ago when they murdered Fritz before his eyes. Never mind, he told himself.

The more energetic people were playing squash today, and Bart joined in for a little while. He was fussed over as usual, and after school people pressed cake and cookies on him.

Sixty-five

He had noticed for some time that his sessions in the school room (not far from the hospital, from which came now and then a querulous groaning) tended to fall into two types. In the first type a teacher tried very earnestly to cram knowledge into his head; in a lesson of the second type (sometimes conducted by the same man or woman) there were long pauses, and an air of futility hung over the proceedings.

Today's session, starting right after lunch, was of the second type. After about an hour Sharon, his instructor, left him alone with a teaching machine, from which he abstracted information on the layout of the Ship, until that got boring. He played with the machine trivially then until they came to get him for dinner.

Sixty-six

He asked to be allowed to study on his own again, and when the request was granted he daydreamed and played with the machine for a while. The vision of young Lotis in the pool came to him, and he got up and went to see if the pool was still there.

Gray-haired Lotis, his teacher again today, discovered his unexplained desertion and came after him angrily. They quarreled, and she tried to take him by the hair and drag him back to school.

She was still a sturdy old girl, but in getting free he pushed her hard enough to knock her down. Alarmed by the way she yelled, he ran away.

Soon Kichiro came limping after him. Bart might have run some more and evaded capture, or sought the safety of his room, but he thrust out his lip and stood his ground. Kichiro slapped him and overawed him and made him come back to school, the hardest grip that Bart could remember clamped on his arm.

Sixty-seven

He heard that Ranjan had died, to everyone's relief, after six years of paralysis.

Bart went sullenly into school, under Kichiro's watchful eye.

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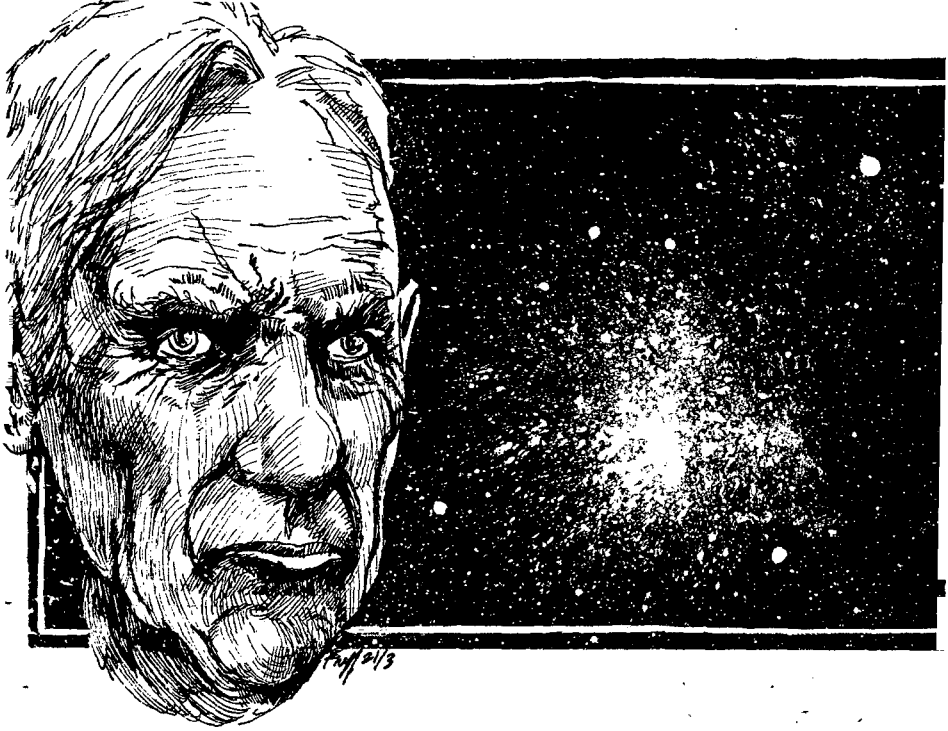

The regular lesson hadn't gone far before Kichiro interrupted it to make a small impulsive speech. "Bart, you're about all that we old people have to live for. You and the hope that you represent, that one day there will be more people on the Ship, people who will get out from under the yoke of the machines, something we've never been able to manage. 'We have done those things we ought not to have done, and left undone those things we should have done.' "

Bart didn't know what to say.

"But all our lives make too much of a burden to be put on you, don't they?" Kichiro added with a sigh. He seemed to be pleading.

"No, it's all right with me if you feel that way."

And his teacher was happy and gave him a manly hug. But Kichiro had missed the point. Bart no longer cared how any of them felt about anything.

Sixty-eight

The first person he met was Armin, who told him that Chao and Basil had both died, separately and rather suddenly, in the past year.

Bart went to school and found that they had a test programmed into the teaching machine, ready for him to take. Left alone to work, he answered a couple of the questions, and then, feeling that he had something more important to do on this day, he got up and left the school. He looked back once and then walked on. Kichiro looked older and less vigorous than he had two years before, and Bart didn't think any of the others would try to get rough with him. Not any more.

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He went to the commissary and punched orders for a small birthday cake into the machine, as he had done for some of those early parties, so long ago. It seemed long to him, now.

Soon he had his cake, and the fourteen small candles he had ordered, and a lighter too. He carried the cake to a refectory table and sat down alone to eat some of it himself. He made a little ceremony of lighting the candles, but would have felt too silly singing himself any songs.

He had ordered the sweet fizzy drink he usually had at parties but soon got up and went to where the wine was always kept and poured himself a cup of that.

Kichiro came in and stared at him a few moments before speaking. "You're supposed to be in school." The old man's voice was half startled and half angry. "What do you think you're doing?"

"It's my fourteenth birthday today. I'm having my cake."

Kichiro stared a little longer through his puffy, old man's eyes. "Well—I'm sorry if we forgot about your birthday, but that doesn't excuse your running out in the middle of a test." He had left a door open somewhere behind him and all the time he was talking, fretful moaning complaints kept drifting from the direction of the hospital.

Armin and Helsa came into the room. "What's the matter?"

Kichiro told them, and they started arguing, Helsa for taking a different approach with the boy, as she put it, and Armin in favor of declaring another holiday. This last suggestion angered Kichiro. They were still arguing with one another when Bart finished the little piece of cake on his plate and got up and left, practically unnoticed. This time he located the pool but found it had long been dry and empty.

Sixty-nine

Bart woke up and left his room as usual, and was surprised when the first set of heavy doors that interrupted his private corridor remained closed when he approached. Then he saw that a new doorway, leading to a new, or newly revealed, passageway had been made in the wall at right angles to the doors.

After a moment, Bart took the new way.

"The prime directives under which I operate are very clear," the Ship said in his ear. "At least one human parent is necessary for children to mature to their full potential.

"We will arrive in less than twenty standard years within a system of planets probably suitable for colonization. From now on you will be awakened increasingly often. You will serve the first generation of colonists as parent. Like them, you have first-rate genetic potential, and perhaps you will remain in some position of leadership when they mature. Today begins your apprenticeship in this role; your elementary preparation for it, a course in the basics of human psychology, was completed yesterday."

With gradual comprehension Bart walked on, guided toward the new nursery by the polyphonic squalling from its full cribs. ★

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LET'S SEE NOW . . .'Vik Kunzur strode heavily through the black marble temple. The occasional clink of his golden steel sword against the engraved stone floor caused sharp echoes in the vaulted nave. . . .'

"Geis!"

Don't bother me now, Alter. Hmm. 'Far behind him, but not so far as before, he heard the awful *slithering* of. . .'

"I've got the Hugo Award results here. The winners!"

'. . .of the Beast With Seven. . .' What's good here? Seven heads? Too common. Seven fangs? Not bad. Seven deaths. Yes! Now. . . *You've got the Hugo results? Did I win?* Give me that paper!

"Not so fast, Geis. Start from the top. Best Fanzine and Best Fan Writer are eighth and ninth."

Alter Ego, you will give me that paper or I will burn—yes, *burn*—every one of your collection of used synapses. Even those few precious blue-spark sex impulses you've been hoarding.

"Oh, Geis. . .Are there no depths to which you will not plunge to get your way? Are you so immoral, so brutal, so merciless, so ruthless—"

Yes! I am! Hand me that list!

"Alright, here. There's nothing worse than a Prime Ego when it smells a big slab of raw ego-boo. Yes. . . yes, look at you. Eyes all lit up, nostrils flaring, that terrible grimace of triumphant glee, the arching of the back, the up-tilt of the chin, the muscle tension, the filled lungs—"

I WON! BOTH OF THEM!

"Ha! I knew you'd say it that

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way. When will you ever admit that *we* win these awards? Without me, Geis, you'd be reduced to writing pleading notes to your creditors asking for more time."

Alter, your insults roll off me like common sense rolls off liberal politicians. Nothing can bring me down today. Wow. 'Best Fanzine: *The Alien Critic*.' 'Best Fan Writer: Richard E. Geis.'

"Okay, now you've blared it to the world. Do you want to comment on the other Hugo winners for 1974 which were given at the 33rd World Science Fiction Convention at Melbourne, Australia in late August, 1975?"

Of course. The lesser categories do deserve mention.

Choke

But first a few words of comment about the ballot counting procedures and their results. Susan Wood in *Locus* #179* reports that approximately 600 final ballots were cast. Since total registration for the convention was over 2000, this means that, as usual, only those who felt themselves qualified and those interested actually sent in their marked final ballots.

The system used to determine the winner works like this:

The voters mark their choices on the ballot: First, Second, Third, Fourth, Fifth.

If none of the nominees in a given category has an absolute majority of first place votes, the nominee with the least first place votes is eliminated and the second place nominees on those ballots are awarded those votes as first place votes.

If there is still not a majority winner, the next nominee with the least first place votes is eliminated and the second place votes on those ballots are assigned as first place votes to the remaining three nominees.

And so it goes until there is a majority winner.

I cannot remember when a Worldcon convention committee has released information on the number of elimination rounds required in each category.

Once in a while a committee will announce second and third place in the final balloting, and sometimes the number of votes each of the leading three nominees ended with.

But not this time. The Aussiecon committee felt, to quote Susan, 'the honor of nomination should be left without ranking.'

"All very noble, Geis, but I'd like to know who came in second and third, at least, and how many votes each got."

So would most of fandom and prodom and umpteen thousands of readers, Alter, but the convention committees are a law unto themselves, each year, and the clear wishes of the convention members are too often ignored.

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* * *

To say nothing of the nominees who didn't win. Why in some categories there may have been as little difference as one or two percent between winner and second-place on the final ballot. —BAEN

* * *

Hmmm. . . .Alter, do you catch a whiff of sour grapes? Ah, well—no, matter. On with the, ahem, *winners*.

* * *

Arghh!

* * *

Cough-cough A definite smell of brimstone in the air. . .you were saying, Alter?

"I see by what Susan reported that the committee in Melbourne *did* release the initial first place votes of the winners."

Yes, and it's interesting to note that only the winner of the Best Novel Hugo won with an outright majority on the first ballot: *The Dispossessed* by Ursula K. Le Guin.

"Says here it won 306 first place votes out of 596 votes cast."

It's a fine novel and can stand up to any novel written in the so-called mainstream of literature. Ursula also won the Science Fiction Writers of America Nebula Award for *The Dispossessed*, as well as the short story Nebula for "The Day Before The Revolution," which was published last year in *Galaxy*. And recently won a National Book Award for *The Farthest Shore*. Quite a writer.

"In your last column, Geis, you thought not too highly of "A Song for Lya" by George R. R. Martin, yet it won the Best Novella Hugo. What say you to *that*?"

It received 153 first ballot votes out of 556. I still think Martin has an undistinguished, rather slow-paced style, but the story has great

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impact in its final section and is a mind-expander and a prime thought-provoker. It sticks in your memory.

I do think, though, that if Norman Spinrad's "Riding the Torch" had been read by more of the voters last year, *it* would have won.

"Uh-huh. How do you explain Harlan Ellison's win of the Best Novelette Hugo with "Adrift Off the Islets of Langerhans. . . ."? As I recall the story infuriated you."

"Yes, it did, does, will. But for all that, Harlan writes like a fiend. He reaches out from the pages and grabs your mind and even if his surrealist science fiction does raise my hackles—

"He says he doesn't write science fiction. It's 'speculative fiction' or maybe not even that anymore. Just fiction."

Whatever. He grabs readers and they like what he writes. He hits like a drop forge in his stories. I salute him. He has a rare talent and much guts.

"He is the only author to have won six Hugos, isn't he?"

Yep, he has a shelf-full too. Well deserved. To continue the record: Harlan's story received 121 initial first place votes out of 571.

"Have you managed to find time to read Larry Niven's "The Hole Man," Geis? It won the Best Short Story Hugo."

Yes, and it's a remarkable story for two reasons: it was published in the January issue of *Analog* and persisted in the minds of enough people for well over a year to trigger a first place vote, and it is an excellent 'hard science' sf story with a massive kicker at the end.

'Susan Wood reports that "The Hole Man" received 158 first place votes of 551 cast, first ballot."

There are those in the fan world who would like to see this Australian Ballot system abandoned, with the winner being simply the nominee who has the most votes when the ballots are first counted. It occasionally works out that a nominee initially in second place will gain enough 'second' place first place votes to eventually win, but almost always the first ballot leader is the final winner.

"Do you have any interest in the Best Dramatic Hugo winner, Geis?"

Honestly, not too much. The Hugos were originally a magazine/book/fan set of awards, with the Dramatic category added years later, as I recall. I don't think the motion picture/theatre/TV worlds hold their breaths waiting for word on this award. I don't think it should be given.

"Nevertheless, *Young Frankenstein* won this time, with 189 of the 575 place votes. Too bad you didn't see it, Geis. I understand it's pretty good."

Oh, one day it'll show up on Channel 2. Get on with the list, Alter.

"How do you react to Ben Bova's

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winning the Best professional Editor Hugo Award for the third year in a row? The initial first place vote gave him 175 of 568."

I have to say it's impossible to determine who is the best editor in the field. Especially it's impossible for the average fan or reader who wants to vote intelligently. Very few people are privy to the inside information that would help decide. What would be the outcome in the field, for instance, if Jim Baen had the budget and prompt payment policy of *Analog* for a year? Or Ted White? What would happen if Terry Carr had *Analog*? What might Ed Ferman do with *F&SF* with an extra fifty thousand or so? Or Bob Silverberg with a well-financed monthly vehicle? Impossible questions to answer.

"I admire Baen for his innovations and risk-taking. Just asking you to be a columnist for *If* and now *Galaxy*. . . ."

Ha. Yes, that did take some courage. Ted White continues to present a surprisingly good product in *Amazing* and *Fantastic*. As does Jim, he labors under massive handicaps. Both display excellent editing skills.

"Ed Ferman. What about him?"

Ed continues, year in and year out, to present probably the highest average quality sf and fantasy of the lot. He's a 'quiet' editor who manages to get many, many fine stories.

"The same could be said for Terry Carr and Bob Silverberg. In-

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telligent men with excellent taste and keen fiction perceptions. But they are anthology editors, and they lack the month-in, month-out presence of a magazine. So tell me why Ben Bova won, Geis."

He has done a marvelous balancing act. He's kept to the Campbell *Analog* formula and not seriously disturbed the solid *Analog* readership, while experimenting with 'soft' science-fiction, new writers, new viewpoints, new dogmas.

"You're saying they *all* should win the Hugo?"

I'm saying the category should go back to being called Best Professional Magazine. That's actually what Best Editor means—now, anyway—in the final analysis.

"Ummph. Let us go on to Best Professional Artist."

I have a flash. . .Kelly Freas won again, right?

"Right. This is his fourth Hugo in a row and ninth win overall. This time his initial first-place votes were 162 out of 588."

Year in and year out the voters love him, and he *is* the premier sf cover artist and illustrator. Superb drawing, technical mastery and color sense.

"Heh. I see by the list that our zine, *The Alien Critic* (now *Science Fiction Review*) only had 127 out of 575 first place votes on the first ballot. We probably only barely won the Best Fanzine Hugo."

'We', Alter?

"Yes, WE, Geis! I have typed my tendrils to the filiments for you, thought up humorous quips and bon mots, conceived excellent covers, taken care of the Archives . . ."

Yes, yes, you do contribute a lot of donkey work. Get on with the list.

"It says here that a Richard E. Geis won the Best Fan Writer Hugo. Now THAT is an outrage! Just once before I die I want to see MY name on the ballot. 'Best Fan Writer—Alter Ego!' "

Ho-ho. Never happen. *I* am master and full-credit-taker here. How many votes did I get?

"Too many. 149 out of 509 on the first ballot. God only knows how many of those 149 belong to me. If there were any justice in this world—"

Fortunately, Alter, there is no justice. The meek will never inherit the Earth. Rumors to the contrary are propaganda planted by the True Secret Masters to keep the huddled masses under control; promise them Heaven and give them Hell. Political and religious leaders have known that for eons. Who won the Best Fan Artist Hugo?

"Not so fast, Geis. I refuse to be hurried along and shamelessly manipulated. I think I'll just reveal a few bits of information. . . ."

Alter! Don't—

"Such as the rumors that Burt Akers, the author of the Dray Prescot *Antares* saga published by DAW, is the long-time English fan and professional, **[CENSORED.]**"

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Alter, he hasn't confirmed—

"And that one of the authors behind the Gregory Kern house name who write the CAP KENNEDY series for DAW is actually **[LIKEWISE.]**"

Unproven! Unverified! You can't—

"And that the secret behind Michael Moorcock's incredible production of novels is a sentient IBM Selectric named Jerry Cornelius who has a fondness for creating heroic Fantasy."

Stop! This is getting out of hand. Get back to the Hugo Awards or—or I'll use the incantation and the amulet (I found them yesterday where you'd hidden them!) to force you to read every single word of *Dhalgren* again.

"Arrrghh! Not that! Where- . . .where was I? Yes, here. . . . Bill Rotsler won the Best Fan Artist Hugo. For lo these decades Bill's clever, funny, biting cartoons and illustrations have graced generation upon generation of fanzines. Now, long overdue, he has a Hugo. And the first ballot first place votes are convincing: 215 out of 555."

There's more writing on that paper you have, Alter. *More* awards?

"Says here. . . The John W. Campbell Award for best new writer. Says here P.J. Plauger won it."

Don't look blank, Alter. He deserved it and you know it.

"May be, Geis, but damned if I can remember any of his stories."

For instance, he had a novelette in the February 1974 *Analog*. And there are others.

"Well? Is he a good writer?"

In "Wet Blanket", the February *Analog* story, he writes with genuine skill and talent, I think. He apparently has scientific training, and in this story he portrays a near-genius scientist who cannot trust his or any other government to keep the peace and not misuse his discoveries. I tire of the cliché and the paranoia that runs through so many of *Analog*'s stories, but the scientist/technician readers love to read about evil military/political villains and self-sacrificing, heroic I-know-best scientists. Plauger uses the theme well.

"I have one more award here, Geis. The Grand Master of Fantasy (Gandalf) award, which went, this year, to our friend Fritz Leiber."

Nobody, but nobody will argue with that award. Fritz *is* a Grand Master of Fantasy. . .and science fiction as well, I think. He lives in San Francisco now, but I remember him best from when we both lived on the ocean front in Venice, California. Me—

"Us, Geis, US!"

—You'n me, Alter, in that dinky one-room third floor apartment, and he in that wonderfully cluttered ground floor apartment two blocks away. . . .

"Get off the nostalgia kick, Geis. Talk about science fiction. Say something outrageous."

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That's your job, Alter. *You* say something monstrous. I need to throw you down into the dungeon again, as punishment. I admit to more than a mild discomfort at having you up here where we humans are.

"Huh! You call yourselves human? Most so-called humans, Geis, are concerned with money, power, sex and death. You have been taught to be ashamed of those interests, however, and as a result you fill the air and fill printed pages with bullguana as you pretend otherwise. Hypocrisy is the first lesson a human child learns. After that it learns multitudes of variations in the art. Now it has reached the point where whole industries and reputations, all kinds of vested interests, are built upon the Established Hypocrisies. If people suddenly became honest with themselves and others the economy of the world would undergo a revolution, culture would be turned inside out and societies would be tumbled down to bedrock. But all this would heal with remarkable speed and lo, most people would be happy for a change.

It is true you would have a new set of unemployed—religious leaders, politicians, many, many bureaucrats. . ."

Never happen, Alter. Too much money in unhappiness.

"Bah, all humans are cowards."

Alter, I'm worried about you. You've just shown the first symptoms of that awful disease called Idealism. Tell me, when did you first feel a niggling dissatisfaction with reality? When did the word 'should' first worm into your mind?

"BAH! Maybe you're right, Geis. Maybe I don't belong up here in your world. I'm going down to the Archives for a few hours of blessed solitude."

* * *

Yes, he did it! Stepped into the jury-rigged matter transmitter he created (behind my back) from the two-way TV intercom I had installed to avoid having to trek down to the dungeon, and he crackle-zapped himself precisely where I want him!

Now to trap the presumptuous little smart-aleck down there. The dungeon door is still locked, barred and chained. His only way out is via the transmitter.

Now I open this closet door. . .pick up the sledgehammer I had secreted there for just this possibility. . . . .

Now— **grunt** SMASH-TINKLE/CRASH/POP/IMPLODE/REND/BREAK/BAM. . .

Done. I have him back where he belongs. He's stuck down there with all those books and magazines and fanzines and a radio and a TV and all that free time. . . . .

DAMN! ★

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GALAXY BOOKSHELF

Spider Robinson

A Mirror For Observers, Edgar Pangborn, Avon/Equinox, 222 pp., $1.95

Continuum 1, Ed. Roger Elwood, Berkley Medallion, 202 pp., 95¢

Continuum 2, Ed. Roger Elwood, Berkley Medallion, 186 pp., 95¢

Continuum 4, Ed. Roger Elwood, Berkley/Putnam, 186 pp., $6.95

Tomorrow Today, Ed. George Zebrowski, Unity Press, 188 pp., $3.95

Andromeda Gun, John Boyd, Berkley Medallion, 172 pp., 95¢

The Eden Cycle, Raymond Z. Gallun, Ballantine, 232 pp., $1.25

Buy Jupiter and Other Stories, Isaac Asimov, Doubleday, 206 pp., $5.95

Time For The Stars, Robert A. Heinlein, Ace, 188 pp., $1.25

18 Greatest Science Fiction Stories, Ed. Laurence M. Janifer, Tempo, 310 pp., $1.50

Minds Unleashed, Ed. Grof Conklin, Tempo, 248 pp., $1.25

The Expendables #2: The Rings of Tantalus, Richard Avery, Fawcett Gold Medal, 192 pp., $1.25

Space 1999, WPIX TV, Channel 11.

I'VE A JOY TO SHARE with you this month, and a confession of sorts to make. There are, I cop, some gaping holes in my background as an sf reviewer. There are classic novels I've never read, giant authors I know only by reputation, Big Names whose stuff I have never tried, either because the cover blurb turned me off (*stupid* reason) or simply because no one whose judgement I respect recommended them highly enough. I'm conservative about spending my sf dollar—I prefer a sure thing.

And so I've only just discovered Edgar Pangborn.

I haven't been so delighted since (years ago, thank God) I discovered

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Theodore Sturgeon. In fact, the comparison is apt. I like Pangborn and Sturgeon for very similar reasons. Both are thoughtful, mature writers, and both remind me at times of Brunner's Chad Mulligan, bitter drunk, crying at the world, "Goddamit, I love you all." Both are bitterly disappointed in man's evil, and both are hopelessly in love with man's good. Both are addicted to creating and falling in love with warmly human, vibrantly alive characters, and making you love them too.

A Mirror For Observers, a winner of the International Fantasy Award (like Sturgeon's *More Than Human*), is not a great book. But it certainly deserves its inclusion in Avon/Equinox's "SF Rediscovery" line (an estimable series of books, at best forgotten classics, at worst interesting historical landmarks). It may be called "early Pangborn," copyright 1954 (nine years after Edgar went free-lance, his second novel), and it has its share of weaknesses. The plot, in the light of modern sf standards, is implausible when it isn't trite; the alleged "Martian observers" are purely human archetypes; and some of the dialogue is just godawful.

But read it as an allegory of the struggle between good and evil, and it becomes thoughtful, incisive, and magnificent in scope. It is a slap in cynicism's face, a letter of reference to God on behalf of humanity, the story of a bitter conflict for possession of a single human soul, and its happy outcome. Imagine Ambrose Bierce as thesis, and *Mirror* as antithesis: no timid apology, nor even spirited defense, but a quiet, assured denial of the indictment. You've already heard me heap guano on the Campbell Memorial Award judges who alleged that the "recognition of the fallen state of man" was "a requirement of all great literature." Well, *Mirror* fulfills one of my own prime criteria for all great literature: it helped reconcile me to the tragic joy of being alive.

——Maybe you *believe* that everything sucks and we're all full of shit. Most of you live in America, so I grant you the evidence is convincing. So go read *Mirror For Observers* and remember why you consented to be born.

You did, you know.

* * *

Having been wiped out by early Pangborn, I shoveled through the mountain of review copies I keep piled by the stove (makes sense—half of them end up *in* it) for some more Pangborn I could review. (I haven't had time for recreational reading in *months*—do you people *realize* the sacrifices I make for you? Wading doggedly and dutifully through the monthly sludge when I've had three prime John D. MacDonalds waiting on my desk for *ages*?) All I could find were some

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short stories, and so I discovered two—or rather, four—peachy anthologies, one okay and one simply superb. (Digression/hint: if the publishers of Pangborn's *Davy* and *Good Neighbors* are listening, know that I would give prompt and careful attention to review copies of same. His *The Company of Glory* was published in Galaxy; I may review it anyway.) I may as well take the okay one first; I can see that it will require the most space by sheer weight of wordage. It comprises four books, of which I have received three.

Editors love gimmicks. Theme collections, several writers using an identical first chapter, male and female writers assigned the same theme: the average editor is a sucker for 'em. And ever since Heinlein's Future History series and Howard's Hyborian Age, writers (me included, Mr. Callahan) have been suckers for the "extended story," the continuous-background story or novel sequence. A hack will use this device to milk a single vision for several publisher's checks; a master will use the extra space to weave a wider, deeper, richer tapestry.

In the latter hope, Roger Elwood commissioned a total of 11 authors to write 32 stories for the *Continuum* series. The 4-story cycles (and one "revolving authorship" —gimmick within a gimmick!) were to be connected, but not interdependent—you shouldn't have to read *Continuum 1*, *2* and *3* to appreciate a story in *4*. Nonetheless I waited until I had all but *Continuum 3* before reading them for review, to check on Elwood's claim. I read Philip José Farmer back-to-front, Pangborn front-to-back, then said the hell with it and read the rest of the stuff one book after another in the order you're supposed to.

The standout, of course, was Pangborn. I was deeply gratified to see the maturity of the talent that had written *Mirror* in 1954. "The Children's Crusade" in *C-1* is a magnificent account of the March of the Mutant Children to Nuber; "The Legend of Hombas" in *C-2* was a thrilling affirmation that human wisdom, no matter how many times lost, will always be recreated; and "Mam Sola's House" in *C-4* was a subtle and yet broadly hilarious anecdote. "Hombas" at least was Hugo quality, and each tale is itself sufficient justification for buying the book it comes in.

The stories share only the background world in which I'm told Pangborn's *Davy* is set.

Farmer's series, however, was a simple "continued-story" format, a Tragedy In Four Acts. Each story taken by itself is only a fragment, and reading them in reverse order (which by Elwood's premise should have been okay) was like reading something that's been nettirw sdrawkcab—you can make sense out of it, but only with effort. (Fully aware of this, Farmer spent

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the first half of the second story in a clumsy recap of the one before. I don't know what he did in *C-3*, where the recap must have been fatter, but by *C-4* he abandoned it entirely: the last story, by itself, is unbalanced and confusing.) When painstakingly assembled, the pieces formed a story that I thought was shallow and second rate.

Poul Anderson's stories all take place on Rustum, the world of his 1961 *Orbit Unlimited* (itself a collection of three connected but discrete novelettes), and all take their plot from Rustum's unique cartography. The stories aren't perhaps Poul's best, but they are master's work; and it was good to meet up with Joshua and Danny Coffin again—I enjoyed all three heartily. Poul's a thoughtful writer.

On the other end of the scale were Thomas N. Scortia's "Armageddon Tapes" series, which I found unreadable and boring; Gene Wolfe's stories, which I couldn't make head nor tail out of (which may be only a measure of my ignorance); Anne McCaffrey's "Killashandra The Crystal Singer" series, cloying and trite despite a breathtaking premise; and the revolving-authorship Robot-world series, some of which were well-written and all of which were minor. I like Chad Oliver, and found two of his "Caravans Unlimited" yarns good if routine (didn't like "Shaka!" in *C-1* at all), but taken together they make me won-

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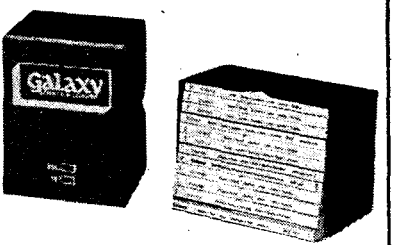

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der if there isn't at least one planet out there that *isn't* a dead ringer for Africa, or one alien society that ain't a ringer for primitive man. By the end of the series, everything except bare-bone plot mechanics was a cliché, and neither characters nor the single moral question considered ("Is it okay to mess with primitive cultures?") grew after the first story. Not depth but repetition.

At 95¢ each of the *Continuum* books are a fair buy by today's standards, but you might want to borrow a friend's copies for the Pangborn and Anderson. (A minor gripe: it seems to me, perhaps in my naiveté, that it ought to be possible to proof out at least almost all of the typos in a given book. *C-4*'s printer consistently turns "e"s into "s"s and "o"s into "e"s. Okay, maybe he was working from a muddy carbon—but why did so many errors go unrepaired?)

* * *

Inflamed by Pangborn-hunger, I next selected *Tomorrow Today*, edited by the redoubtable George Zebrowski, and published as the first of Unity Press's new "Planet Series". This was a clear case of following the trail of tusks to the Elephant's Graveyard itself.

The cover design by Eric Mathes is unquestionably the best I have ever seen on a book of sf, strikingly beautiful and spiritual. The spectrum-of-style provided by Zebrowski's selection of authors is dazzlingly wide and rich. And each and every story in the book is a pure masterpiece of its type.

Oh, one of the stories (Norman Kagen's "Counter Ecology") I "didn't care for" in the sense that one prefers scotch to gin. But it was damned good gin. Similarly, two of the stories (Chelsea Quinn Yarbro's and Mack Reynolds's) had incredibly clichéd premises (I first read the basic plot of Reynolds's "Visitor" in a Marvel comic in 1956, which means it was ancient then), but both are excellent stories, consummately crafted. And John McHale's pompous introduction nearly convinced me the book was going to be awful, but it wasn't.

Boy, was it wasn't. Gregory and Jim Benford's "John of the Apocalypse" was one of the most chilling glimpses of a possible (who dat say "probable"?) future I've ever read; "In the Wind" by Glen Cook (a new writer to me, Clarion grad) was excellent in spite of a bonehead printer who ran the footnotes in the body of the text; James Stevens' "Syn" was a remarkable extrapolation of the war mentality to its logical culmination; and the Pangborn . . . oh, the Pangborn!

I hereby nominate "Harper Conan and Singer David" for the Hugo Award for Best Short Story, and recommend it to every one of you out there. Having discovered Pangborn, I now have the happy duty of turning my wife Jeanne on

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to him, and this is the one I'll start her on. It is one of the most warmly human stories I've ever read, and made me laugh and cry aloud in the space of 22 pages. Partly because of it, and partly because of the total content of the book, I further nominate *Tomorrow Today* for the Best Anthology Hugo—at least, so far. It's September as I write this, and who knows what Christmas will bring?

But at the very least, this is the one to beat for this year's honors. Solid, thoughtful, adult stories, worth even the stiff $3.95 pricetag (the *cover* is worth it). A Best Buy.

★ ★ ★

John Boyd is another name heretofore unknown to me (the copyright is in the name of "Boyd Upchurch", which makes it even more confusing), but his *Andromeda Run* shows signs of great promise. It isn't a great book, but it bears the signs of a writer who just may have a great book or two (or three) in him somewhere. It concerns an alien missionary of nonmaterial nature, "G-7," who insinuates himself into the brain of a two-bit gunman and bank-robber in America's Old West, partly to lead Mankind to enlightenment and partly to satisfy his own craving for corporeal existence. The results are entirely hilarious, a kind of humor that reminds me of Gordy Dickson at his funniest and partly of *The Ballad of Dingus McGee* (the excellent book, not the clumsy movie rip-off), to which *Gun* bears a strong resemblance. The off-color joke which builds from p. 84 to its outrageous punchline on p. 90 is alone worth the 95¢, as is the saga of the Smallest Building In The World With Flying Buttresses.

The book has, as I say, its flaws: the first six pages in particular were so floridly overwritten as to be barely comprehensible, and from time to time the prose stumbles. But I enjoyed it, and I think you will too. I'd like to see Mr. Boyd's next book.

★ ★ ★

The Eden Cycle by Raymond Z. Gallun would have made a peachy novelette, but it has one of those premises that only a genius could make into a satisfying novel. Gallun posits a race of aliens who come to Earth and offer us total Sensory Experience Simulation—that is, the literal fulfillment of our every wish. Their process conveys effective immortality (I don't know what happened to entropy) and will provide any sensory experience imaginable. You cannot, of course, physically harm any other human or alien being. In fact, you can't do *anything* physically—your body lies comatose while you live in a world of utterly real-*seeming* fantasy, which follows your every whim. Some humans even allow their

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physical being to be refined down to Basic Personality Nodules, stacked in a subterranean vault like so many cantaloupes. No one, apparently, turns down the aliens' offer—though this is unclear; holdouts may have simply died off.

Except for this last implausibility, the premise is fascinating: sort of Total Television. But what Gallun makes of it is largely a T.V. Guide, a catalogue of all the basic human fantasies, presented one after the other in repetitious and ultimately stultifying procession. *Eden Cycle* is about two people (realsies) who wade through an endless series of imaginary dramas before opting for real life—but they know from the start that the imaginary dramas are only imaginary dramas, and when they finally do get as bored as I was pages ago and have the aliens return them to real bodies on the real surface of the real planet Earth (which is okay by the aliens: satisfaction guaranteed or your karma refunded), they end up copping out. Real Life, they discover, entails the horrid possibilities of failure and death: surely fantasy is preferable. The hell of it is that Gallun seems (if I read him rightly) to *approve* of their choice. They come across as idealists who decide to work within the system to beat the system, and I've heard that one before, thank you.

It takes an imaginative writer to string total wish-fulfillment out over 232 pages, and for my money Gallun didn't pull it off. As Lester Del Rey says, when anything can happen, who cares what does?

* * *

Buy Jupiter and other stories is recommended for all Isaac Asimov fans, but I wouldn't give it to a neofan who wants to know who is dis Asimov feller anyway. Though some of its 24 stories are quite good (I especially liked "The Greatest Asset," "The Pause," "Day of The Hunters" and the title story), the majority are distinctly minor. Some are outrageous tomato surprises (*poof!*—a tomato hits you in the face) that nobody else in the world could get away with (in particular "Shah Guido G."), and some are mere throwaway pieces that show signs of being written in a hurry.

But, as with *The Early Del Rey* (reviewed in the September 1975 *Galaxy* Bookshelf), what makes the book are the introductions, the candid glimpses into the personal and professional life of Isaac Asimov, Gent. If you're an Asimov fan like I am, you'll enjoy the biographical commentary and sf anecdotes, which are an extension of those in Isaac's *Before The Golden Age* and *The Early Asimov*. If you're not an Asimov fan, avoid this like the plague, and go read *Foundation*. *Then* read this one.

* * *

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I can't give *Time For The Stars* the space it deserves. First of all, I'm running out of room, and second of all I've been blowing Heinlein's horn so consistently in this column that it's beginning to get monotonous even for me. Suffice it to say that this Heinlein-juvenile is about star travel: about relativistic effects in *human* terms, as felt by a youth riding a just-less-than-light-speed ship while telepathically in contact with his twin brother on Earth; and about the chaos into which physics collapses when said telepathy demonstrates irrefutably that the concept of simultaneity has meaning. Along the way, of course, it can't help but be an exciting and absorbing adventure; *in spite* of the usual ghastly cover painting by "Steele Savage," the direct antithesis of the kind of thing Mathes did for *Tomorrow Today*. (Aesthetic discomfort has forced me to rewrap all of Ace's Heinlein-juvenile reprints in plain brown paper.)

* * *

Couple more quickies before I go. There's not much point in saying a whole lot about Laurence M. Janifer's *18 Greatest Science Fiction Stories* (formerly *Master's Choice*), or the late Groff Conklin's *Minds Unleashed* (formerly *Giants Unleashed*). Most of you are probably long familiar with the stories contained—they are, every one, acknowledged classics of the field, often anthologized, and these collections themselves are in their umpty-umpth edition. If you *aren't* familiar with each and every story in them, you couldn't possibly get a better buy. There you go.

(Oh year—if you're trying to turn someone on to sf, these are two of the books to do it with. As is Zebrowski's *Tomorrow Today*.)

* * *

But don't start them with Richard Avery's *The Expendables #2: The Rings of Tantalus*. Nothing on my review copy indicates that it's supposed to be a juvenile, so I must assume Avery meant it for adults. It fails for either audience. It reminds me of Captain Midnight, with sex added and the science a little watered down. Trash—don't waste your time.

By next month I should have had a chance to catch the first few installments of the new T.V. series *Space 1999* and if it's half as bad as I expect it will be, I'll have some fireworks for you. Also I hope to present the bizarre story of how A.E. Van Vogt (or at least, one of his books) was found back to back with a naked blonde in a deli in Halifax. And other stories.

Till then—have a happy.

* * *

Since the above was written and mailed off, dear readers, *Space*

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1999 premiered. Subsequently your kindly editor called me here in Nova Scotia, and asked me to warn you.

Because there exists a slim possibility that there's a lone reader out there who has not only missed all the episodes so far (I hate this publishing lag—might as well be talking to you by radio from Alpha Centauri), but who has no friends, who was therefore thinking of catching *Space 1999* this week. If so—if you're the guy—I strongly suggest that you will have a lot more fun if you put your head down the toilet.

This on the strength of one episode. I locked myself in my bedroom with the babble-box (we had company that night) so I wouldn't miss a minute. I intended to give the show a fair trial. Imagine my horror when I discovered that the fattest of my guests had tipped his chair against my door from the outside, and I really *was* locked in! I was found several hours later by the RCMP Rescue Squad, collapsed across the tube, trying weakly to destroy it with profanity. The flowers on my dresser were dead, and the flies were tearing each other to pieces.

The scriptwriter is George Bellak, whose only qualifications for writing sf seem to consist of having seen *2001* with cotton in his ears. To paraphrase *Casey At The Bat,* the director was a pudding and the gadgetry a fake. Co-stars Landau and Bain looked like they'd be real handy this winter, cut down to stove length and split. The hideously expensive special effects were inaccurate and dull, derived equally from *2001* and *Earthquake*; and if there's a science consultant connected with the show, he must have no shaving mirror. I can't bear to describe the premise for the series—if you're the hypothetical innocent described above, go find an sf fan, ask him, and then wait until he stops laughing. Bring a lunch.

God damn it to hell, how did it happen? Do you realize they spent a *quarter of a million dollars on each episode?* Millions of bucks were put into a pot to be spent on television sf, and this is what we got. Do fans really get the kind of TV they deserve? Is it somehow our fault? Hasn't it occurred to *one* of the soul-less, brainless shit peddlers of what Harlan calls Cloud-Cuckoo-Land that if they intend to milk science fiction the way they have everything else, it just might be a good idea to consult with some of the professionals and fans of science fiction? To *read* some sf? Won't there *ever* be a mature, adult, well-written sf series on television? Hell, even the cop-shows produced *Baretta.*

Watch *Space 1999?* I'd infinitely rather drop the babble-box into the root cellar, step out the door and through the woodshed, and watch space.

I suggest you do likewise. ★

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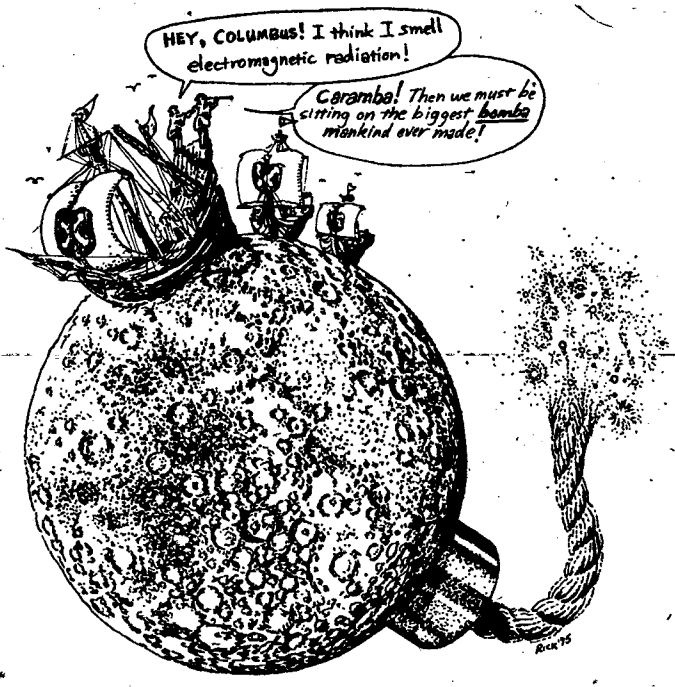
HEY, COLUMBUS! I think I smell electromagnetic radiation!
Caramba! Then we must be sitting on the biggest bomba mankind ever made!

SPACE: 1492

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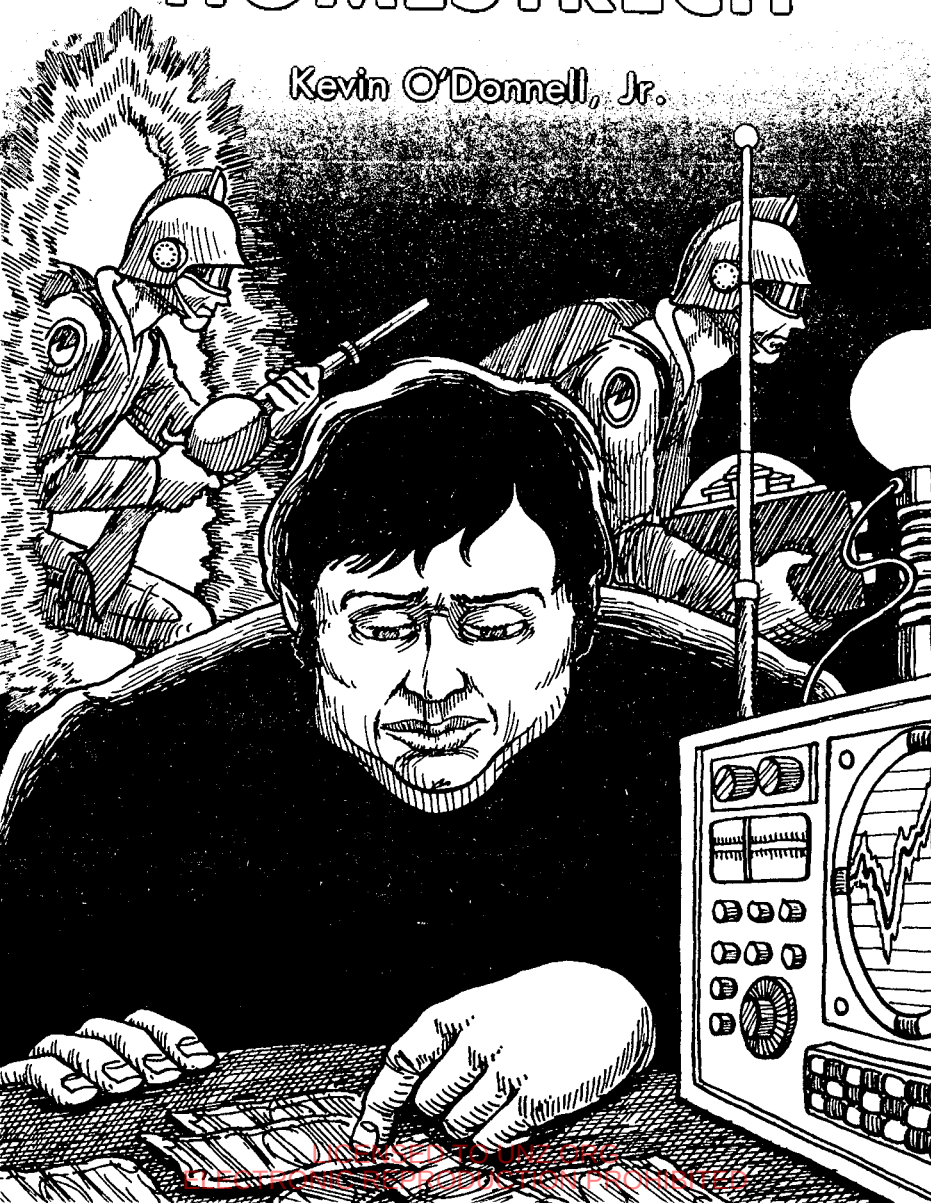
HUNGER ON THE HOMESTRECH

Kevin O'Donnell, Jr.



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ELECTRONIC BOOKS FOR FREEDOM

He had come a long way and suffered much. Now it was time for the Pay-off—but he was broke.

Monday

HE GLARED AT HIS landlady with undisguised disgust. A big, bosomy woman, she leaned easily against the door jamb. The hem of her cheap print dress was torn and drooping; the tip of her filter-cigarette was smeared with bright scarlet lipstick. She blew a lazy smoke ring. "If you don't like it," she was saying, "you can always move out." Her cool eyes tracked the smoke ring as it rolled possessively across his living room.

No words could work their way past the fury in his throat. He watched the writhing smoke impact against the cracked plaster wall and ripple away from the crushed carcass of a mosquito. "Look," he heard himself pleading in his thick accent, "I only vant this place for another two months. How bout you holt the rent down until I'm gone, huh?"

Cigarette ashes tumbled like the dirty grey snow of the city. "Nope," she said flatly. "No deal. Your lease expires next week and you either pay or get out."

"Now look," he protested, hoping that something besides profit could penetrate the coin purse of her brain, "my research is near finisht! Two months, it's all I neet and all I ask. Then I go avay and you can raise the rent to vatever you vant."

"And in the meantime I lose money on your room? Whaddaya think I am, crazy or something?" She saw dismay on his pudgy face and cared little; every tenant showed it when she raised the rent. But behind that look glimmered another, akin to terror. That interested her. She allowed her sharp voice to soften, and with a heavy sigh, she began, "Mr. Schwartz, you know I'm sorry to do this to you, but the taxes have gone up, fuel's gone up, Joe the janitor wants a raise—" she shook her head ponderously "—it's this damn inflation, gobbling up my whole profit margin."

"Inflation!" he moaned. His fingers tugged thick locks of his long brown hair. "If I hear that vord vun more time, I think I go crazy! Everybody in town, he raises his prices because he says if he don't, inflation vill vipe him out. Ant me, I ask for them to giff me little more on my grant, and vat do they say? They say, 'Schvartz, times are hart, inflation ate up all our money and

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ve got none to giff you!' '' He dropped onto the battered green couch, not noticing how the sudden stress of his 225 pounds widened the rip in its motheaten cover. ''I fint the money somevere, voman. Now you go, leaf me alone vit my empty stomach ant my emptier valet.''

''Well!'' She sniffed, and tossed her stringy blond hair, sorry she had attempted to show him the warm heart under her folds of flesh. ''If I were you,'' she said with spiteful malice, ''I'd sell that damn radio you're always fussing with, and use the money for rent, for furniture, and for some decent clothes. That's what I'd do.'' She flounced away, slamming the thin door behind her. A shaken cloud of plaster dust fell from the ceiling.

Schwartz sagged, and his eyes began to sting. He knew that the room, barren except for the broken sofa on which he slept, and the chrome-stripped device she called his ''damn radio,'' was gloomy, dusty, and desolate. He knew that his too-often mended clothes with their frayed cuffs and ineradicable stains made him a figure of fun. He knew that already; she didn't have to tell him! That kind of rubbing it in . . . noisily, he blew his bulbous nose on a torn handkerchief.

An extra fifty dollars a month! There was no way he could afford it. His budget had been prepared years before, and the rampant inflation of the two years he'd been here had caught him in a trap of overplanning. Mr. Anonymous, they had said he would be. Mr. Have-just-enough-money-to-play-the -role-and-not-enough-to- draw -anybody's-attention. Bah! He spat on the floor, wishing it were the desk of a certain economist who thought prediction possible. Here he was, round like a silly balloon because he couldn't afford anything but bloating, starchy foods like bread and potatoes. His drumskin-tight budget was stretched to molecular thinness, and it still couldn't cover expenses.

Well, to hell with orders about radio silence; it was time to demand some help. They could not expect him to do anything more, not when the crack they had spent twenty years prying open was about to be plastered shut.

He pushed himself to his feet with a grunt, and plodded across the bare boards. His wide feet stirred up the dust he never seemed to get around to sweeping.

At the control panel of the five-foot high, eight-foot long device, he flicked half a dozen switches and plugged in a microphone. Then, turning a dial until the oscilloscope readings fell into a familiar pattern, he bent his head and spoke in his native language. ''Come in, Command, come in.''

''Ja. Command here. Why—''

Chilled by the ice in the other voice, he said quickly, ''Counterfeit some more money for me, at once. Send it immediately.''

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"Impossible. Rioters burned the Mint. Everything is gone—the emergency funds, the plates, the paper, even the engraver. It has already caused an economic crisis. Production of our own currency has first priority. You will have to wait."

"How long?"

"Two months, perhaps."

"But it's only nine weeks to The Day."

"We know that."

"But she's raising the rent, and I'll be forced to leave—"

"Then you must find the necessary funds some other way. Out."

Schwartz's receiver clicked once and lapsed into a low hum. He stared at it blankly, unable to comprehend that he had been cut off like a delivery boy clamoring for the master of the house. Of their own volition, his fingers reached for the call button, but he jerked them back at the touch of the slick grey plastic. The ice in the other voice could change easily to fire; he wanted at all costs to avoid that. His record was spotty enough as it was.

With a muttered curse, he unplugged the microphone and returned it to its niche. A quick swipe of his hand threw the switches to the *off* position; the small green lights, which had glistened through the transmission, darkened. Numbly, he trudged across the empty room and fell lengthwise on the couch.

Tuesday

Smog-sapped sunlight, an invalid on an obstacle course, was feeling its way through the dust and grease on the east window. He rubbed the grey stubble on his jaws, trying to remember what it was that he had to do.

After a moment it came to him, as it did every morning, and he walked across the room. His run-down heels made lonely tapping sounds; their half-hearted echoes deepened his sense of abandonment.

"I don't know why I bother any more," he mumbled in the tongue he spoke only in the isolation of his room. "Why should I try to keep the way clear for them, when they will not raise a single finger to help me when I need it?" He curled his own stubby fingers around a toggle switch and checked the chronometer imbedded in the chrome paneling. 11:49, with the sweep-hand approaching the minute mark. When it reached exact vertical, he pulled the switch and held it down for five seconds. Released, it snapped back with a solid thwack.

A foot away, he twisted a dial and watched green waves of light wash across the screen of the oscilloscope. Steady, even, perfect symmetry. The five-second burst of energy had kept the tunnel walls smooth and disciplined. Like pruning a hedge, he sometimes thought, a hedge of wild, unruly spatial-temporal shrubs that would fill the tunnel if they weren't burned back

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with monotonous regularity. The oscilloscope patterns dissolved into green snow as the technicians at the other end applied their own electronic shears. Before it returned to normal, he had switched it off.

He was in trouble. He had to raise a bare minimum of one hundred dollars, and quickly. If he failed, he would lose their only beachhead. They simply couldn't find another, because the tunnel, the carefully-maintained tunnel that had cost them an atomic bomb on the other side and the worst power blackout in history on this, the tunnel ended right in his room. Fifteen years of work, by himself, by the previous operatives, and by the amazingly resourceful engineer who had patched together a prototype of this machine from local radio parts—it would all go to waste. Despite his irritation, he remained loyal; he couldn't let that happen.

If only there were no need to prune it from both ends. But the "branches" didn't grow in front of the two mouths, they grew along and out of the inner walls. Each blast snapped off only those which grew towards its source, and those which were perpendicular to the tunnel walls. Those bending in the opposite direction were only flattened, to spring back up and obstruct the path as soon as the pressure was released.

Damn. He lifted a torn sofa cushion, and squeezed his hand through a rent in the grey cloth over the springs. His fingers drew out a thin envelope. His bankroll, each bill was the work of a master forger with all the resources of an anxious government behind him. He fanned the deliberately aged bills. Not enough. No matter how many times he counted them, there were never enough. As the days trundled past, they grew fewer and fewer and he could see that when The Day came, there would be none. In fact, there would have been none for some weeks already.

He had no choice. Returning the envelope to its cache, he repositioned the faded cushion and rose to his feet with a resigned sigh. Standing orders were to stay by the radio, in case of emergency, but they had to be disregarded. He would get a job. He could stand to work with these people for the short time needed to earn one hundred dollars. Any emergencies would have to wait. If he worked longer, he realized, he could earn enough to pay for a decent meal, and maybe even for a new white shirt. Buoyed by the prospect, he gave his room a last worried glance and waddled out.

* * *

The harried, shirt-sleeved man at the employment agency was neither helpful nor hopeful. He scowled at the form Schwartz had handed him, then leaned back in his metal swivel chair. "Mr. Schwartz," he began,

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"I'm going to be honest with you. I don't think you have a chance of finding a job in your specialty."

"But this country needs qualified electronic technicians, ja?" He felt a flutter in his heart and a queasiness in his stomach. It was demeaning enough to have to ask, but to be told that . . . perhaps the man did not understand. Maybe he saw only the rumpled, ancient suit and the whiskery face, and thought he was unreliable, an alcoholic or a derelict. "I assure you, sir, I haff the excellent training ant skills, ant—"

The man threw up his hands helplessly. "I understand that, Mr. Schwartz, and I believe you. But you see, with government funding for scientific research cut to the lowest it's been in forty years, and with unemployment in general running at 13%—" he put his elbows on the desk and lowered his drawn face into his hands "—every job in this field has been taken by out-of-work engineers, physicists, mathematicians . . . hell, in a little radio repair shop down the street, there's a Ph. D. in chemistry working for $2.68 an hour." His eyes lifted, and bore into Schwartz. "I haven't seen an opening in months. And if I ever do—" he glanced at an open file folder on his cluttered desk "—well, you're number 638."

A cold breeze shivered his large body. "Vell, then," he said in a tone that tried to be jocular but came out shaken, "I vill take anything. Anything you got, I take."

"Yeah, sure," muttered the man. "Anything, huh? I'll put you on our 'anything' list." His fingers danced on the keys of the computer terminal set into his desk; he frowned at the reply on the read-out screen. "But I'm afraid that's not much better, Mr. Schwartz."

"Oh." He shifted his weight to look at the screen. An embalmer's needle injected bleak despair into his veins. "I see," he said in a hollow voice. "Number 9849."

"I'm afraid so."

"How long a vait do you think it vill be?"

A humorless chuckle slipped out of the man. "Six, seven weeks before we have that many openings in the entire metropolitan area. But maybe a little longer to find one that fits you." Measuring Schwartz with his eyes, he shook his head sadly, as if they'd need a very large opening. "All I can say, Mr. Schwartz, is stay by your telephone and wait for our call."

"Ja, tanks," he murmured, rising with the lumbering, disbelieving movements of a penguin that has missed its prey. "I vill do that. Ant you do the best you ca huh, young man?"

"I certainly will." Eager to end the interview on a high note, he stretched his hand across the desk. "Good luck, Mr. Schwartz," he said sincerely.

"Ja, thanks." He held the hand for a brief instant, and then let it drop. Politeness, he thought as he

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stumbled out into the crowded waiting room, was one thing, but actual physical contact was . . . was maybe something he had best get used to until The Day came.

* * *

That afternoon, after an hour of gloomy pacing, he threw open the grimy window and thrust his face into the blustery winter wind. Below, hurrying people huddled in heavy coats. He watched pocketbooks swing and fancied he could hear silver coins jingle. *Don't be romantic,* he warned himself, *they don't use silver here any more. All the same . . .*

Stepping back into the room, he pulled the window down and leaned thoughtfully against the wall's cold plaster. He could get the money, with very little trouble, if the men at the training camp had been right. "You are now programmed for life," they had said, "and you will never lose what we have given you here. You may get rusty, and your endurance may drop, but the moves and the postures are deep in you as your mother's maiden names. You can never forget them." If they were right, if five years of training hadn't been erased by ten years of dissipation, then he could raise a hundred dollars—and more, and more!—with less trouble than he had thought.

Shortly after sundown, he found his first victim in Riverdale. Waiting behind a thick tree trunk, he heard confident footsteps. Poised on the balls of his feet, he let the middle-aged businessman take one more step. Then his right hand went up as his left foot went forward; sole scraped sidewalk just as hand struck suntanned neck. The man crumpled. Schwartz's massive left arm whipped around his victim's chest and dragged him into the shadows.

Two minutes later, the hand-tooled calfhide wallet had yielded $24.00. Schwartz fingered the collection of credit cards for a moment. The embossed plastic numerals pressed through the cool slickness of his rubber gloves. Then he shook his head, returned the cards, and slid the wallet into the man's coat.

He felt a cold burning in his lungs and studied the sprawled figure. Left alone, his victim would freeze to death. And in that neighborhood, with the residents' fear of muggers—a proper fear, thought Schwartz with a trace of irony—the man wouldn't be noticed till morning. His eyes raked the dusk for the familiar sight of a fire alarm box.

He laid the man's briefcase and hat on his stomach, then hoisted him. Checking that there were no dog-walkers nearby, he half-sprinted, half-staggered to the alarm box. After setting him down and folding his chill hands across the briefcase, Schwartz pulled the alarm. By the time the fire engines came

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and the firemen spotted the body, he was four blocks away and moving fast.

* * *

Later that evening, in another part of the city, he unfolded the six bills and smoothed each one out. He couldn't shake a nagging guilt. For twenty-four dollars, he had nearly killed a man. As he stared at the faces of foreign heroes, there floated through his mind the notion that he wouldn't be so unhappy if the victim had had over a hundred dollars.

One hundred dollars would ensure the success of the mission. For that, he realized with a flicker of resentment towards the men who had programmed him as though he had no more principles than a computer, for that he would kick an old lady into the path of a bus. And glow with pride, if success followed.

But when, like now, the violence didn't result in the success it had seemed to promise, when it was only an unnecessary prelude to further violence . . . he refused the waitress' offer of more coffee and handed her one of the bills. The conditioning hadn't deprived him of all his scruples and he felt like a heel. *Damn that businessman,* he thought as he took his change and counted out a fair tip, *damn him for making me do that again.* Stepping out into the night, he cast an eye at

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the thick cloud cover over the city. *And damn me for being the kind of man who will do it again, if I can't get the money any other way.*

Wednesday

Swarms of people crowded the spotless streets, but Schwartz drifted through them like a leaf blown through a flock of pigeons. Driven by frustration, he bowled down the sidewalks, one eye searching for "help wanted" signs in store-front windows. Seventy-six dollars short. Sixty-three days to go. A mean, petty predicament. He could pay the rent and the bills, but starve. Or he could eat and pay the bills, but lose the room. Or he could pay the rent and eat for a few days, but then starve and lose the electricity.

He had to find a job. He couldn't stomach another mugging, not after the way he'd felt the previous night. But he had to hold the room, the electricity, and himself for sixty-three more days. He could go without food for the last period, that didn't matter, because the first troops through the tunnel would be carrying rations, but he had to eat for the first fifty-some days.

Ten blocks he had walked without seeing a single sign. God, what a lousy place to need a job. Unemployment at an all-time high, combined with rampaging cost-push inflation. If he could only switch apartments, find a smaller, cheaper place somewhere in Bedford-Stuyvesant . . . but he couldn't, because the tunnel ended in his room.

Scuffing his ripped shoes on a sidewalk just cleaned by one of New York's legions of Sanitation Department welfare workers, he pondered alternatives:

Begging. He could squat with an old tin can and hope that the hard-eyed passers-by would drop in enough money. Sixty-three days, humm, need about $1.38 a day to make it, and even then . . . he rounded a corner and came upon a ragged row of beggars. While one of New York's finest tried to break through their apathy and hustle them away, he remembered his callous landlady saying that five or six were found dead, of exposure and/or malnutrition, every morning. Wouldn't work. If they, who showed the signs of Death Triumphant in every stooped shoulder and beaten expression, couldn't cajole survival money out of the citizenry, how could he, with his tremendous girth, even hope to?

Welfare. He'd investigated that a week ago. The young social worker had been frankly despairing. With able-bodied welfare recipients limited by statute to the number of people the city could actively employ, and with a waiting list of over fourteen thousand for the few spots that opened up every month, there was no possibility that the city could help him. Unless, added the nice-voiced lady, aged beyond her years by the strain of attempting the impossible, Mr. Schwartz suddenly

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developed a crippling infirmity—say, a missing eye? a hand severed above the wrist?—in which case the city would be allowed to assist him. Her own eyes, Schwartz had guessed as his stomach swung like a maddened gyroscope, had seen such things. He had thanked her, and left. But now, with the fifteen year old plan about to fall through because of unforeseeable problems . . . he turned his collar against the damp bite of the wind. He could not afford to spend time in a hospital because he had to prune the tunnel every morning. If it weren't kept clear, the interval between soldiers would lengthen to much longer than the planned one second. And if it went untended for too long, Nature would reclaim its lost domain and the conquest could never take place.

Mugging. He could try it again. Remorseless and implacable, he could venture into the—he shuddered at the memory of flaccid flesh. Hand-to-hand combat against a determined foe on a battlefield is one thing. But to use it on a city street, to risk the death of an innocent individual. . . .and the damn city practically teemed with cops . . . he vowed there'd be no encore, unless it became absolutely essential.

His face a contorted mask of fear and anger, he strode down the cheerless street. No jobs, no welfare, no begging, no mugging. The stream of people parted for him as the waters had for Moses, instinctively and inevitably. He scowled at the grey, worried faces that swept past, despising them and hoping that one would dare swirl into his path so that he might run it down. A pawn shop caught his eye and he hesitated, wondering if he had anything left. Then he sighed and went on. He had nothing but his couch, the clothes he was wearing, and the machine. The clothes he could not do without, the couch had been contemptuously spurned by the man who had purchased his bed and tables, and the machine . . . without that, there was no sense to anything.

If only he had seventy-six dollars . . . while his legs pumped mechanically, his mind wandered into the daydream it had been shaping since his arrival. The Day. The big machine, glowing and humming and occasionally spitting a polite little spark into the gathering dusk. Soldiers tumbling out of thin air into the living room, the first five moving lithely to long-determined guard posts. The next twenty carrying the pieces of the portable force-field generator. A momentary interruption in the flow of tough, uniformed men as the engineers lifted and grunted and screwed and welded. Then the field is shimmering and the building is invulnerable, so the flow begins again and the pool of daring commandos swells until it bursts through the front door. With the fury of unappeasable

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flood waters, it sweeps the other tenants out onto the street, where they stand confused and sobbing. Hungry men with hair-trigger reactions lope down the stunned streets and expand the perimeter. Special teams roar off in commandeered vehicles for synchronized attacks on the nerve centers of the giant city—the telephone centers, and telegraph, and radio, and television. Others are racing to the bridges, to seal the island off. Finally, just as dawn is beginning to break, all the Consolidated Edison power plants are seized and New York is deprived of its electricity. The huge dynamos whirl only for the shining machine in his living room, which, in tandem with the one at the other end, begins to force back the electromagnetic spatial-temporal walls and turn the narrow, one-man passage into a freeway large enough for the biggest bomber and the heaviest tank to travel side by side.

Then, with the beachhead secured and reinforcements pouring in, all UN delegates are rounded up. A special meeting of the General Assembly, televised to the world, at which Schwartz's President and Commander-in-Chief appears and presents his non-negotiable demands: immediate cessation of all hostilities. Immediate unilateral disarmament on Earth's part. Immediate surrender of all nuclear weapons and other fissionable materials, to be transported back to Schwartz's world. Failing that, immediate nuclear destruction of Moscow, Peking, Paris, London, and Washington, D.C.

Earth would have no choice. It would promptly surrender and relinquish its missiles and bombs. Once all nations were stripped, the political scientists back home assured everyone, no nation would consider building them again, because no nation would risk the invaders' return.

But how was he going to get the money? Seventy-six dollars. Didn't the idiots on the other side realize that if he didn't have it, the whole plan would collapse into nothingness? Why the hell didn't they bust their asses to print up four more twenties, and shoot them through? Not for the first time, Schwartz cursed the rebellious competence which had brought about his exile to this god-forsaken land. If it hadn't been for his talented arrogance, if he hadn't ignored their silly rule book and done things his way, they would be more sympathetic. Hah! They'd never have sent him: a good, obedient spy gets promoted into a cushy desk job. A maverick gets tougher and tougher assignments, until at last one of them kills him.

God, the military mind confused him. Here he was, engaged in preparing for the most momentous event in the history of two worlds, and . . . but he wasn't preparing. He raised his head and growled at a taxi cab which had had the temerity to hurry him with an impatient

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beep. No, on this job, he wasn't a commando, or even an agent. He was nothing but a highly-skilled janitor, sent to keep things clean and ready for use.

He was back in his own neighborhood and the dingy front of the four-story brownstone in which he lived loomed up before him. He stood on the sidewalk a moment longer, shifting his weight from foot to foot, then grunted decisively and wheezed up the front steps. He'd call them again, by damn, and if they refused to come through, well . . .

* * *

Despite an unusually poor connection, the Duty Officer's voice was like a steel blade on a frosty morning. Wasting no time, it slashed at him: "You try my patience, Schwartz. You were ordered—"

"I know, I know," protested the fat man warily, "but the situation here has become untenable, and if—"

"Still the money, eh?"

"Ja," he muttered through clenched teeth. Unreasoning hatred of his superior flowed through him. Like a heady wine, it threw him off guard. But at the last moment, just before he began to spew forth his accumulated bitternesses, instinct stilled his tongue.

"Impossible."

"Sir," explained Schwartz, barely controlling himself, "without the money I lose the apartment, without which the invasion will fail. If you want—"

"Don't be an ass, Schwartz. Absolutely nothing can be done."

"Sir, it's only a—"

"First, we don't have the facilities to counterfeit the money, remember? Second, the invasion of Alternate Right is now underway. Do you know how little power we have to spare? Even the energy we are using on this conversation is too much, and to send a packet would require ten times as much, if not more. And we don't have it."

"But sir, the invasion wasn't planned until—"

"Don't tell me what I told you. We jumped the gun because Alternate Right's stepped-up nuclear testing was playing havoc with the Midwest. We had no choice; the Indianapolis area was getting burned too often. As was Shanhaikuan, in China."

"Does that," mumbled Schwartz in confusion, "postpone the invasion here?"

"So far," replied the other, humanly uncertain for the first time, "it doesn't seem that way, but we can't be sure until perhaps a week in advance."

"And you can't—"

"No!" barked the officer. His static-furred voice echoed off the bare walls. Schwartz trembled with sudden apprehension. "No more pleas. You are wasting time

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and valuable energy. Find the money yourself. You are a talented agent. You can do it. Do you read me?"

"Ja, ja," sighed Schwartz. "I read you, sir. Over and out."

"Roger, over and out."

Schwartz's soft hand swept down the switches, then came to rest on his bent knee. Slowly, it formed a fist, and beat against the thick flesh of his thigh. The muffled thuds came faster and faster and faster until Schwartz suddenly jerked to his feet and shouted, "Goddamittohell!"

Hands locked behind his back, he started pacing. The ancient boards of the warped floor squeaked at his passage, protesting his weight. Furious, he slammed his feet down, to crush all resistance from the wood. There was no other way he could obtain the money. None.

* * *

He went prowling for another benefactor that night, in Manhattan, on the East Side. There, if luck rode with him, he would encounter someone whose wallet could make up the entire deficit and spare him a third assault.

He found his mark in the shadows, reading a tattered poster on a building. He was a bareheaded, husky man in his late twenties. The smoothly-tailored lines of his long leather coat had probably run to at least $800; his shining black boots looked like custom-made Italian imports.

The harsh evening wind covered Schwartz's rapid breath. His mouth opened. One swivel of his head assured him of privacy; he took four steps before a calm voice commanded, "Fritz, defend!"

Against a backdrop of late winter gloom gaped the slavering jaws of a huge Doberman pinscher. Back-drawn lips unsheathed long, yellow fangs; the tongue was a red carpet for a blood-curling snarl.

Even as his conscious mind registered the danger, the superbly trained body that slept under his flab awakened. His left hand came up, then waved to the left, drawing the dog's eyes and turning the angle of the incoming jaw a few degrees. His stiffened right hand slashed at the middle of the dog's long neck. Its vicious eyes glazed over as it slammed onto the sidewalk. It lay temporarily still, too stunned even to twitch. Two quick kicks finished it off and then Schwartz was on the owner. "Shouldn't haff done that," he growled, as savagely as the Doberman. "I coult haff been hurt." His hand rose and fell and the young man dropped across the body of his late defender.

Thursday

Flushed by the first budgetary surplus he had seen in six months, Schwartz treated himself to a sirloin steak brunch at Schrafft's. Washed down by generous helpings of

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Heineken's, the meal put him in such a genial mood that more of the dog-owner's money went for a tip than he had planned. But he didn't care; the billfold inside the Saville Row suit had been stuffed with $20 bills. Schwartz had secreted enough in the couch to keep him in steak until The Day came.

Ah, The Day. With Alternate Right being subdued now, the last threat to Center World would be removed in sixty-two days. Years and years of planning, of hiding, would have come to fruition. His world could rest easy, assured that there would be no more hissing, melting discharges of wild energy.

The first calamity had come some forty years earlier, when the center of Peshawar, one hundred miles west-north-west of Rawalpindi, had burned to the ground. It had been neither a gradual, spreading fire, not an explosion. It was as though every ramshackle hut had been saturated in gasoline, and simultaneoulsy torched. The scientists, the fire investigators, the survivors—all had thrown up their hands and put it down to the whims of a mad God. Three days later a like fire had killed ten thousand in Miram Shah, two hundred miles west-south-west of Rawalpindi. For years suspicion rested on Hindu fanatics. But then similar things happened near Moscow, and later between Ankara and Istanbul, and his world had edged to the brink of war.

After frowning for so long, fortune decided to smile. A German scientist promulgated a theory, confirmed by tests carried out in Turkey, deep in the Pacific, and again near Moscow. Somewhere else, not on his world but near it, wild energy was burning holes through walls which no one had known were there.

The scientist postulated that alternate worlds existed, but were separated by space-time barriers. He went on to suggest that when sources of tremendous energy, such as nuclear weapons, expended themselves in one sudden burst, the barriers were warped open. He predicted that they would quickly knit themselves back together, but not before passing disastrous floods of energy.

Through perseverance and chance, leading physicists were finally able to observe one such flood. Their theories sent a thousand engineers scurrying to duplicate the process with less energy. In time, they found it. A minute atomic bomb cracked the walls; an engineer-cum-agent slipped into the next world. He, in turn, made his way to New York, and over a period of years pieced together a device for establishing contact. The scientists on the other side, alert for his signal, rushed their own equipment to the site of the temporary warp and established the beginnings of the tunnel.

Once the first tunnel became a

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going operation, another was installed to link Center World and Alternate Right, whose atomic tests were also wreaking havoc. Contact established and institutionalized, Center World, desperate for security, began plotting the conquest of two other worlds.

The Eastern Alliance was given charge of conquering Alternate Right, the world now in the process of being subdued. Schwartz smiled into the brilliant winter sunlight as he thought of the Moscow and Peking hordes swarming through that other Moscow. Just as his own forces would overrun this city in only sixty-two days.

Ah, he thought, *how wonderful it will be, to live without the fear of suddenly learning that you uncle's hometown has been vaporized by the waste energy of a pointless nuclear test. How wonderful it will be to close up shop here and return to my own world, a place of sanity and peace.*

Lost in dreams, and dulled by the unaccustomed richness of his brunch, he failed to notice the sharp glance of a passing man. He turned into his street, still unaware that the other was combing the area for a policeman. He didn't even hear the excited voice shrill, "That's him, officer. That's the man who mugged me and killed my dog!"

The policeman's deep heartiness finally penetrated his cloud. "Hold on there, now sir. I'd like to have a word with you, if I may."

"Pardon?" He turned and blinked, and in that instant saw the well-dressed young man behind the protective bulk of the policeman. Before his conscious mind could begin to react, long years of training took command. His left foot snapped up, into the patrolman's stomach. As he dropped, Schwartz ran. Behind him arose a furious scream: "Stop that man! Stop him he's a thief! Stop him!!!"

Passers-by leaped for safety as Schwartz barreled down the sidewalk. Driven by one thought, that he should warn his superiors that all hell was breaking loose, he made no effort to approach his building by a roundabout route. He ran directly up the front steps and burst like a whirlwind into the tiny lobby. Panting heavily, moving too hastily, he had to try twice before he could fit his key into the lock. Police whistles were blowing just behind him by the time he got the door open.

"Stop or I'll shoot," boomed a voice over the rumble of cars and the beeping of horns. Pedestrians added cries of alarm, concern, and curiosity to the general din. "Stop, dammit!"

Ignoring the cacophony, Schwartz began to swing the heavy front door shut. From the street came the bark of an automatic. He staggered back, clapping his hand to his chest. A low roar of satisfaction rose from the crowd that had already gathered. The policeman, still winded, hob-

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bled slowly up the steps; he was not prepared to see Schwartz appear again, to close the door. The cop took the last four steps at gut-wrenching speed, and pounded futilely on the indifferent wood. "Open up in there," he shouted, "open up, this is the police."

Inside, Schwartz gasped for air and began the climb. The pain in his withered lungs was frightening. He would have preferred to sit quietly and wait for the police, but the youth he had once been refused. Grunting, he pressed a handkerchief over the wound with his left hand while he clung to the bannister with his right. The stairs were steep and narrow. He told himself that he couldn't possibly mount them, but his body responded to orders laid down fifteen years earlier and one time-space wall away: never die without first reporting it.

The muscles in his legs weakened; his arms and shoulders took on the extra burden. He coughed, and almost lost his balance when a fine spray of blood splattered against the faded yellow wallpaper. Only by closing his eyes was he able to resist the sudden dizziness, to continue to the top.

As quickly as his tortured body would permit, he closed and locked his door. With his last reserves of strength and willpower, he shuffled across the floor. Puddles of crimson on the dusty boards bore mute testimony to the nature of his wound.

At the transmitter, he peered through a haze of pain. His trembling fingers found the switches, groped for the microphone, and found that. He was speaking in staccato bursts, oblivious to the furious voice from the other end.

"Schwartz here . . . I've been shot . . . police about to—to arrest me . . . matter of minutes . . . dying . . . get replacement here quick . . ."

Awkawardly, he thumbed a row of buttons labeled "Matter Receive." As he staggered to the couch, an efficient voice replied, "Five minutes, Schwartz, hold on for just five minutes and we'll have a man there to help you. Just keep the police away for five minutes, ja?" The final note was pleading. A faint smile formed on Schwartz's thick lips, to be frozen there by the chill approach of death.

But before two minutes had passed the cops were outside his apartment door; the landlady had finally been roused by their tumult. Angry, heaving shoulders splintered the flimsy plywood and an instant later they stood over his cooling corpse. The youngest, a rookie fresh out of the police academy, was surprised by Schwartz's pleased expression. "Look at that; willya?" he demanded of his partner. "The guy actually looks relieved."

"Why not?" shrugged the older patrolman, still nursing his bruised stomach. "He prolly knew his worries were over, huh?"

"Yeah, I guess so." Hands on

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hips, he scanned the aching emptiness. "Helluva place to die, that's for sure."

"Any place is," grunted the second.

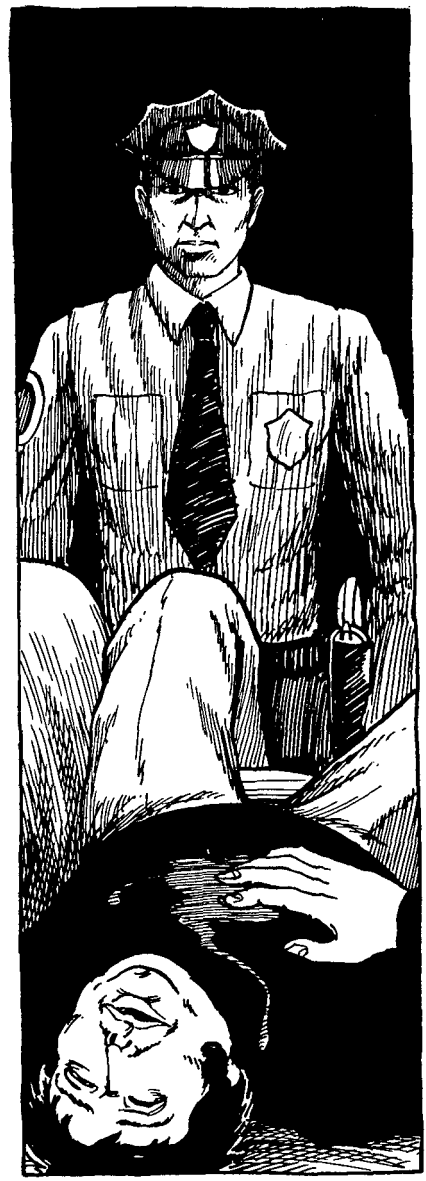
"Hey, he left his machine. on. Should I turn it off?"

The older man frowned, thought, and shook his head, "Nah, leave it on till the lieutenant gets here. You know how he hates for us to mess with stuff."

"Screw your lieutenant!" bellowed the landlady as she stormed into the room. Clearly outraged by the destruction of the door, she shot Schwartz a murderous glance. It weakened only when she realized he was dead. Her blonde hair fluttered as she seethed with frustration. "Screw your lieutenant," she repeated, with less violence but more conviction. "If Schwartz isn't going to be around to pay the bill, his damn radio goes off!" Wheeling to face the great transmitter, she reached down and yanked the heavy plug from the wall. The little green lights went dark. "There!" As she sailed out, slightly mollified by her last gesture of contempt, the two cops looked at each other.

"Should I plug it back in, Joe?" asked the rookie in an anxious tone.

"Nah," said the patrolman. He sat gingerly on the arm of the couch, less then eight inches from Schwartz's triumphant smile. "We just don't tell the lieutenant it was on. What he don't know won't hurt him." ★



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DIRECTIONS

Dear Dr. Pournelle:

I was very interested to read your article on the "Lovecraftian universe."

"The most merciful thing in the world," I thought to myself, "is the inability of the human mind to correlate all its contents. We live on a placid island of ignorance in the midst of black seas of infinity, and it was not meant that we should voyage far. The sciences, each straining in its own direction, have hitherto harmed us little; but some day the piecing together of dissociated knowledge will open up such terrifying vistas of reality, and of our frightful position therein, that we shall either go mad from the revelation or flee from the deadly light into the peace and safety of a new dark age."

Or, in fine, "So ph'nglui mglw'nafh Cthulhu R'lyeh wgah'nagl really fhtagn!"

Well, you can't say you all weren't warned.

Yours truly,
Frank John Reid

1900 W. Byron
Chicago, Ill. 60613

Jerry's reply:

I fear I have no comment.

(Nor I.)

Dear Mr. Baen:

Enclosed is a carbon copy of the letter I have sent to the following members of congress: Jacob K. Javits, Charles Rangel, Edward I. Koch, Lester Wolfe, Otis Pike, Bella Abzug, Elizabeth Holtzman, Hermann Badillo, Joseph Addabbo, Benjamin Rosenthal, James H. Scheuer, Shirley Chisholm, Frederick Richmond, Stephen Solarz.

I have also sent copies of Jerry Pournelle's letter to some friends in New Mexico, one of whom owns some 800 acres which he might want to plant with jojoba.

Also, I have made arrangements to present the idea at the next meeting of the Policy Committee of the Liberal Party of New York State, where I have every reason to expect it to be accepted without opposition. This would mean that candidates for Congress seeking the Liberal nomination (which includes those mentioned above, and others) would have some additional impetus to support such legislation.

I intend in the near future to write to members of Congress from the Southwestern States, with a copy of Jerry Pournelle's letter for each of them.

Please forward the enclosed carbon copy of this letter to Jerry Pournelle; I think he, too, would be interested in this result of his letter. Thank you.

Sincerely,
Bret Hooper
(Member, New York County Liberal Party Executive Committee)
518 East Sixth Street
New York, New York 10009

Sample letter:

November 24, 1975

The Honorable Shirley Chisholm
House Office Building
Washington, D. C.

Dear Ms. Chisholm:

Enclosed is a copy of a
of *Galaxy* magazine,
suggestion which I mos

Although the mos
benefits of Mr Po

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accrue to the part of United States most geographically distant from New York, the proposed project would benefit the human race as a whole, not just those of a few states.

But the most compelling arguments may well be two that Mr. Pournelle does not mention directly in his letter to *Galaxy*: 1. The favorable effect on our international balance of payments; and 2. The honor that would accrue to the United States as a nation.

I submit that at a time when our City and State are being attacked by petty politicians from certain other States in the hope of grubbing a few votes, your authorship and sponsorship of legislation to subsidize the cultivation of jojoba would be a gesture in the finest tradition of our City and State; an outstanding example of your and our concern for the needs of everyone, not just our own parochial concerns. (Not that New York wouldn't benefit: where else would most of the stocks of jojoba oil refining companies and other associated industries be traded? Would none of the oil itself pass thru the Port of New York? Or is it likely that none of the insurance business generated would be underwritten by New York insurance companies? I am quite sure that significant material benefits would in fact find their way to New York City and New York State.)

I am sure you know far better than I what political capital you might be able to gather in the process.

Thank you for your consideration of this important matter.

Sincerely,
Bret Hooper

Since its appearance in the September '75 issue of Galaxy *Jerry's "Feature Letter" on the interchangeability of jojoba and sperm oil has generated a remarkably intense response from diverse sectors of the political spectrum; it's beginning to look like* Galaxy *and its readership may be playing a significant role in saving a possibly intelligent and certainly magnificent species from extinction. See page 163 (inside-cover), where the letter has been reprinted in its entirety—to add fuel to the fire. Hmmm. . .whoever could have guessed that one day there might be a "Pournelle Plank" in the Liberal Party Platform. (Dr. Pournelle has promised me Summary Execution if I even suggest that his name be so intimately linked with the Liberal Cause; I therefore mention it only as a possibility. . .)*

Dear Mr. Baen;

Poul Anderson's piece in the September "Forum" was the most interesting I've read on the topic of interstellar travel lately. I was glad to see that he qualified the idea that we can reach the stars with the statement, "If we have the will."; that's a mighty big "If".

Collectively (as a country, or as the human race) we don't even have the will to reach the planets, much less the stars; and I don't think we will for a long time. Evidently, Americans prefer to let their tax dollars be spent on ". . . bureaucrats, subsidies to inefficient businesses, or the servicing of the national debt . . ." (et al)—and to Hell with any benefits from space exploration.

Though it's going to take longer than it should, I'm confident we'll make it to the stars.

Romantic notions have a habit of becoming concrete reality, given time.

Sincerely,
Michael A. Banks

P.O. Box 312
Milford, Ohio 45150

Hear, hear!

Dear Mr. Baen:

For several columns now, Geis has been beating around the proverbial SF bush, but I thought he was finally going to get down to the NITTY-GRITTY in October's *Galaxy*. He disappointed me once again, however, so here I come with my two-cents-worth. (Don't get me wrong, Geis; your column is the first thing I read).

The number of creatures out there in

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reader-dom and writer-dom that have the inside dope on what science fiction ought and ought not to be are only slightly less prolific than the mosquito, and just about as beneficial. "Give us some round characters!" some cry. "Some symbolism, allusion, imagery, a message!" Others retort, "The hell with all that college educated stuff. We want action, plot, sense of wonder." Still others wonder, "Why all the swearing and screwing?" Well, I have an idea. Why not take all that rot, compile it into one EXHAUSTING volume, and call it *Much Ado About Nothing?* (Aw, shucks, I think somebody used that title already. Maybe we could shove it down a black hole?)

There is no instant formula for writing a story, science fiction or otherwise. It is not like writing an essay-exam, where you plug in the magic ingredients and bullshit the rest. You cannot make every story profoundly philosophical, great grandiose scenes are not always necessary, and you do not have to swear just for the hell of it. Oh, sure, a writer has to be aware of his readers, but he must also be true to himself. Preoccupation with making a story fit a certain style has got to interfere with the creative process. There are probably good writers, right now, frustrated with that very thing.

So, why not give a guy a break? Don't go calling him a *bleep* because you don't like his style. (Maybe he doesn't like yours.) To limit the scope of SF is to limit its possibilities. Give a little slack. You might be surprised.

Sincerely,
David L. Miller

1619 Sunset Drive
St. Charles, Mo. 63301

Dear Jim,

Helium was a most intriguing story. (I wonder where you discovered Arsen Darnay; I haven't seen his byline anywhere else.) And insanities such as "Elephant with Wooden Leg" are a break to see. You certainly are going in new directions with *Galaxy*!

Also, I feel that Jerry Pournelle is the equal of Asimov in covering science—though I can imagine the Good Doctor saying bunk on UFOs—and his story-telling is on a level with the good years of Heinlein. In a way we should be thankful that the space program lost him.

Sincerely
Roy J. Schenk

Rt. 1
Canisteo, NY 14823

Arsen's first story was found lurking in what we fondly if perhaps inelegantly refer to as the "slushpile." His second story was not unsolicited. Since his "discovery" Arsen has sold a novel to Ballantine and stories to that Certain Other magazine, and of course he has been represented many times in Galaxy.

Dear Mr. Baen,

I recently wrote to another science fiction magazine, the one that used to live on a formula of brilliant engineers versus govt. bureaucrats, mindless mobs of students, and other criminals. (Sometimes the good guys were business bureaucrats, police, or military bureaucrats. The magazine is now off the bottle but regresses when hungry.) Their reviewer put down *Mote in God's Eye* because he thought the characters were too stereotyped. I patiently explained how the collapse of the First Empire had put selective pressure on humanity, making the resulting characters a little overspecialized, becoming more like the Moties. The Editor sent me a note telling me the characters were too stereotyped.

Now you're planning an article on the *Mote* by the authors. They might like to know that *somebody* understands.

Forrest Curo

1409 15th St. #3
Sacramento

That article has since appeared in the January '76 issue. Now a lot *of people understand.*

Dear Mr. Baen,

This is just a fan letter for the greatest

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thing you have published since you took over Galaxy. *Inferno* is far ahead of *Love Conquers All* and *Orbitsville,* even ahead of *Sign of the Unicorn* and *The Company of Glory*. You have published a classic.

And you have also turned SF upside down. You have published a religious SF story that is also action/adventure. From now on, the rest will have to measure up. You have treated what is possibly the biggest no-no of them all. You have printed a story that has things to say about SF *now*—but which will be a classic forever.

What I'm trying to say is that Larry and Jerry have made SF a whole new ball game, and have stuck meticulously to Dante in the bargain. For example where Dante made comments on politics, J & L made comments on science fiction. And such a plausible job of modernizing Hell, too! Darned if you don't have half of fandom reading Dante. Got me, for one. If those guys don't win a Hugo, a Nebula, a John W. Campbell Memorial Award, an International Fantasy Award, and a Tolkien Memorial Award for this, the whole thing will have been rigged.

Of course, if things get desperate, you could always stick Dr. Pournelle on a window sill. . . . .

John R. Woodward
4010 Underwood Street
Hyattsville, Md. 20782

You're certainly not damning with faint praise!

Dear Mr. Baen,

If you don't publish this letter, please pass it on to Messrs. Niven & Pournelle to let them know how very much I enjoyed their *Inferno*. I reread Dante simultaneously, and found it increased my enjoyment of both the medieval and the modern treatments. Niven/Pournelle provide a "damn" good commentary on Dante, & vice versa.

On the strength of *Inferno,* I have entered a subscription with your Subscription Dept. Of course, I dare not hope for a sequel, in which Niven & Pournelle would follow Benito or Allen up through Purgatorioland—but it surely would be nice!

Phyllis Ann Kars
Box 8082
Louisville, Ky. 40208

Dear Baen,

Just want to take a moment, or two, or three, to let you know how your communications are faring, the effects created. . .on this reader.

Oddly enough, I have only been reading SF mags for about, oh, two years. I got hooked on SF fifteen years ago at my hometown library which boasted mainly of Asimov, Bradbury and damned little else.

After living in L.A. for a couple of years, I suddenly discovered these little books with the colorful covers. I had read about five issues of *IF* before it submerged, so I didn't feel much of a loss.

Currently I can afford four mags a month and this is how I rate them;

1. *Galaxy*
2. *Fantastic*
3. *Amazing*
4. *Fantasy and Science Fiction*

Your mag started at the bottom. Working upwards was gradual and my opinions are based on; a) entertainment quality, b) writer's ability c) editorial personality, d) overall tone of the mag.

One by one, if you'll bear with me:

A. You present a great variety of stories. Poetic, serious and funniernhell. I enjoy almost all of your selections, to a greater degree than #3 and 4, tho I wish you could branch off into deeper fantasy on occasion. Consider that a suggestion, not a complaint.

B. The stories are consistently well written, even the ones I don't like for content, such as Hammer's Slammers. The other mags often provide extremely well crafted pieces. . .with a lack of simple entertainment.

C. As I have stated in previous letters, I back you 100% in your efforts at uptone, positive ideas. Especially some of these cyclical solutions you have presented. Also I enjoy the affinity that comes out between you and the people you work with.

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D. Take Geis and Spider. They are both refreshing as a heady whiff of Lysol. Both cogent (in their off moments), funny and damned nice to read. I think they carry out very well the overall tone of your mag and one which fits in with my tastes just perfectly.

But what has brought you to the top of the list is not any one item. It is the combination of the four, so, Baen. . . .thanks a whole, big bunch!!!! Oh, jeez! I also love your artists, especially the Dalzellian panda.

Bye,
Christy Marx
1811 Bellevue Ave.
L. A., Ca. 90026

P.S. Please tell Niven and Pournelle that *Inferno* was excellent. Very, very fine work.

Thank you, Marx. I must admit to indecent pleasure in basking in such undeserved praise; generally it's the contributors who take the credit and the Editor who gets the blame—which is as it should be. So to be fair. . .Jerry, Spider, Dick, Wendy, Cynthia Bolling, Freff, and all the other members of the Galaxy *Cluster: Stand up and take a bow!*

Galaxy

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An Open Letter to the Readers of *Galaxy*:

A recent *Galaxy* Forum piece by Fred Pohl showed how a set of problems can be made to solve each other. I think I've found another of those snake-balls that will proceed to untangle themselves once we've taken the first steps—and since my letter on tuna fishing and dolphins elicited such an intense response, I thought you might like to bring this matter to the attention of *Galaxy's* readership as well.

The sperm whale is the largest of the toothed whales; it reaches a maximum length of 60 feet, and is the only cetacean (indeed, the only living animal) with a throat large enough to admit a man. It is also the source of ambergris. [*Also, it is not impossible that the sperm whale is as intelligent as* homo sapiens. *Ed.*] Unless we do something, the species will be extinct within ten years.

The sperm whale is in trouble because of its spermaceti organ, a rather mysterious thing in its head that carries about a ton of whale oil. No one knows what it does for the whale—but we find it quite valuable; the US could use 50 million pounds of it per year, or 25 thousand whales' worth.

Of course we no longer buy sperm oil. The Marine Mammals Protection Act quite rightly forbids importation of all whale-derived products. Good as far as it goes, but not enough to save the whales; Japanese and Soviet whalers go right on killing, and there's a ready market for every available drop of sperm oil.

That's problem one, then: saving the sperm whale from extinction.

Problem two: severe unemployment in our Southwestern deserts.

Dual solution: those same Southwestern deserts, Indian Reservation land, mostly, can be made to produce 200 pounds of sperm oil per-acre per-year.

You see, there's this scruffy-looking plant called the jojoba (pronounced ho-HO-ba) that grows wild in the Sonora and southwards, and the seeds of this shrub turn out to be composed of about 50% of an oil nearly identical to that of the sperm whale—certainly near enough so for industrial uses.

A recent study by the National Research Council shows how planting 400 acres in jojoba each year for the next five years will ultimately provide an annual yield of a half million pounds of sperm oil indefinitely. The initial cultivation and refining will need Federal subsidies—but the major costs will be salaries for people at present unemployed—who will then become taxpayers.

So. A viable industry in a high-unemployment area, and sufficiency in sperm oil. So far so good; but I recommend we go much further.

Why not plant a *lot* of jojoba? The cost of subsidizing the cultivation of several thousand acres of the stuff can't be large compared to the millions of acres of tobacco for which we pay subsidies. Why not grow enough jojoba to sell the oil cheap on the world market; so cheap that there's no profit in killing sperm whales.

The benefits—alleviating unemployment, sufficiency in sperm oil, and saving a species from extinction—seem well worth the cost. Normally I do not recommend government subsidies; in this case I'll swallow my theoretical objections. I've written my Congressman about it. Care to join me?

Jerry Pournelle

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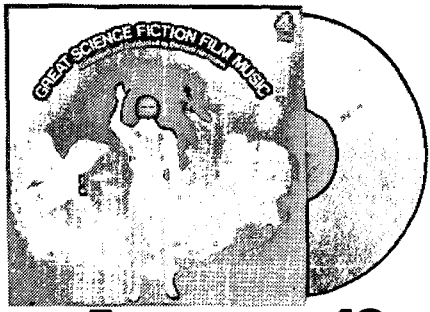

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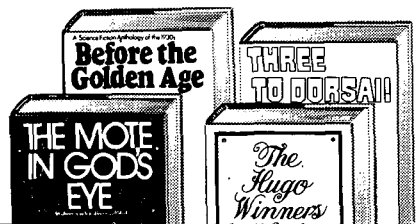

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